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## **Hybrid Learning During Covid-19 Pandemic: Lessons learned from Malaysia and China**

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### **Abstract**

Two mixed-methods research on hybrid learning were conducted in Malaysia and China during and after COVID-19. The respondents are 546 educators, and 2782 students from schools and universities. Results indicated synchronous online learning is more frequently conducted than asynchronous online learning. Similar teacher challenges are student engagement, teacher-student interactions, and self-discipline. The top weakness in Malaysia is the lack of devices and connectivity while in China is a lack of teacher training and resources. Similar student weaknesses are self-motivation and time management. Suggested improvements are enhanced technological infrastructure, more interactive, engaging pedagogies, professional development, personalized support, regular assessment, and monitoring.

**Keywords:** hybrid learning, comparative study, sustainable learning

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### **1.0 Introduction**

COVID-19, an unprecedented crisis that birthed many questions about the instability of contemporary teaching methods. To describe this viral pneumonia as a challenge is a massive understatement for the vast impact it brought. This paper presents an effort to understand what went on in the schools during Hybrid Learning (HL) while objectively investigating factors influencing learning and teaching environments during the pandemic. As both China and Malaysia encountered their respective experiences of HL, this study examined the effectiveness of HL in different learning environments and make comparisons of their effectiveness. The pandemic taught the world that it can never be too prepared, and the purpose of this study is to broaden the perspective of all stakeholders involved in creating a conducive and productive learning environment for students in the foreseeable future.

#### **1.1 Background and Problem of Study**

A global threat that has taken the lives of 6.9 million individuals, the Novel Coronavirus disease (COVID-19) has taken the world by storm since December 2019 (World Health Organization, 2023). Due to the many confinements imposed by governments in many countries, it recognized how the whole educational community was being faced with a major challenge (UNESCO, 2020). There was much impetus to put into motion drastic shift in paradigm in the way education was being delivered hence the influx of attention on HL (Prem et al., 2020). Malaysia and China could not escape from this reality of adopting HL. Schools in both countries used their ingenuity to provide immediate

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solutions so that continuous education could happen. However, this came in the form of emergency remote learning, or ERT as Hodges et al. (2020) called it. There was no room to properly reflect and analyze the best methods to sustain quality learning environment for students. There is a need to better understand how to minimize learning loss and maximize effective learning during unprecedented times. This will help turn unpreparedness into confidence to face the challenges in the event another major shift is required in the education field.

## 1.2 Research Questions

Research Questions are as follows:

1. What are the levels of Satisfaction with Hybrid Learning in Malaysia and China?
2. What were the features of teaching and learning used in Malaysian and Chinese schools during the pandemic?
3. What were the factors influencing learning during the Covid-19 pandemic?
4. What are the suggestions for improvement?

## 2.0 Literature Review

### 2.1 Factors Influencing Hybrid Learning

HL has been an increasingly feasible method of delivery in education (Fadhilah et al., 2021). Teachers and students have also been shown to become more self-reliant and be able to express more creativity in forming their learning styles (Hapke et al., 2020). However, during the HL process, regulation in the preparation of material and monitoring during synchronous and asynchronous sessions must be enforced so that students can reap the benefits of increasing their creativity through the freedom provided (Zb et al., 2021). Furthermore, communication channels such as telegram and WhatsApp became the main medium for teaching and learning because it was seen as viable sites that help nurture collaboration between individuals and minimize learning loss (Angrist et al., 2020). A recent systematic review of 15 observational studies examining the effects of the pandemic concluded that boredom, loneliness, and monotony due to social isolation are felt by students. These results tell of the new challenges they face with even the unavailability or lagging of internet access prohibiting the smooth transition into hybrid learning and most opted to forgo online learning to teach asynchronously (Indiran et al., 2022). With these underpinning factors, many learners struggled to keep up and faced the backlash in the form of learning loss (Kaffenberger, 2021).

### 2.2 Learning during Covid in Malaysia

During the COVID-19 outbreak, the immediate response across Malaysian schools is desperation and anxiety in trying to retrofit their lessons (Tadesse & Muluye, 2020). With the infrastructure and possible resources available, educational institutions around Malaysia adapted quick to the new shift and demands that the pandemic brought by adopting remote teaching-learning and distance learning (Azman & Abdullah, 2021). Student learning during the pandemic is affected by many overarching elements such as technology skills, anxiety, and stress level, preparedness of students, learning platform, learning content, as well as pedagogy (Azzman Abdul Jamal, 2022; Hashim et al., 2021; Tekkaus, 2022). In the early onset of the pandemic in Malaysia, learning was halted temporarily as the government worked urgently to find a solution and as things began to settle and the pandemic became the norm in 2021, schools began to have students come back in batches or placed them in alternating groups to minimize the physical contact with one another.

### 2.3 Learning during Covid in China

Between January to July 2020, all face-to-face classes in schools were suspended in China to prevent the spread of COVID-19. With the continued concerns for health and safety, schools and universities were physically closed. Some of these schools and universities began to explore hybrid learning. For example, in Wuhan, China, the government "instructed a quarter of a billion full-time students to resume their studies through online platforms. This resulted in the largest online movement in the history of education, with approximately 730,000, or 81% of K-12 students, attending classes via the Tencent K-12 Online School in Wuhan" (Li & Lalani, 2020). Hybrid Learning also happens in schools and universities in Chengdu, the capital city of Sichuan Province, southwestern China. The main issues were quality education, support for parents, and the well-being of students, to minimize the negative effects of the pandemic. Synchronous online learning or asynchronous online learning was conducted through a mix of in-person and online platforms such as Zoom, Ding Talk, and Tencent. (Li et al., 2021).

### 2.4 Theoretical Framework

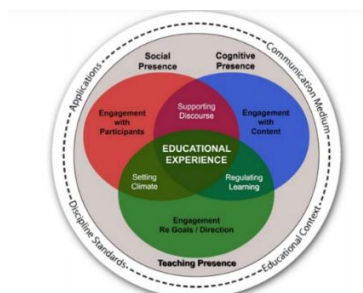


Fig. 1: Community Theory of Inquiry

The theoretical framework of this study is based on Community Theory of Inquiry as shown in Figure 1. The Community of Inquiry Theory (abbreviated as Col) creates deep and meaningful experiences through the three cognitive processes of teaching presence, social presence, and cognitive presence. Effective collaborative knowledge is constructed by the learning participants through the interaction among these three core elements (Feng et al., 2018). It is often applied to a learning situation using computer-mediated communication.

### 3.0 Methodology

A mixed methods approach was used. An online questionnaire (both closed and open-ended questions) was administered and focus group interviews were conducted. The same research design and instruments were used in both countries. Questionnaires were sent randomly to students and teachers online. In China, questionnaire was uploaded to the "Wen Juan Xing" online platform. Data were mainly collected from the Sichuan province. In Malaysia, a questionnaire was sent to selected schools in identified zones (Central, Southern, Northern, and East Malaysia). Participants were also randomly selected for focus group interviews. SPSS 25 was used to analyze quantitative data. The constant comparative technique and NVivo were used throughout the qualitative data analysis process.

#### 3.1 Respondents

The table below shows the respondents on hybrid learning in two countries.

Role	Malaysia (Number)	China (Number)
Secondary School students	323	102
Primary school students	706	8
Primary School teachers	11	24
Secondary school teachers	43	102
Preschool teacher	11	78
Education Officers (Including curriculum Developers)	16	6
Total	1110	320

#### 3.2 Instruments and Data Collection

Questionnaire instrument sent randomly to students and teachers in Malaysia and China was a mix of closed-choice items (i.e., Likert Scale of 1 - 5) and open-ended items so that richer inferences could be made during analysis. A semi-structured interview protocol was developed with a focus on three dimensions: curriculum content and pedagogy, learning environment, and learning management. Each interview lasted 30-60 minutes and was audio recorded.

#### 3.3 Data Analysis

Quantitative data was analyzed using SPSS 26.0. Qualitative data was analyzed using open coding and axial coding strategies (Corbin & Strauss, 2014). "Microanalysis" was conducted (Corbin & Strauss, 2014) after systematically examining each interview transcript were general patterns related to research questions were identified. This gave rise to conceptual labeling, where categories and themes were developed.

## 4.0 Findings and Discussions

### 4.1 Features of Hybrid Learning

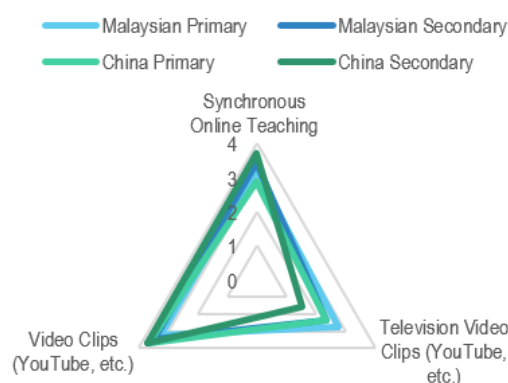


Fig. 2: Features of HL (Teachers)

As shown in Figure 2, synchronous online teaching was more frequently conducted by Malaysian and Chinese teachers (MALAYSIA: M=3.43 for secondary, 3.20 for primary; CHINA: M=3.72 for secondary, 2.9 for primary), especially for secondary school. Not much synchronous online teaching was carried out in China primary schools. Neither country uses much of the television program prepared by the Ministry or Department of Education (MALAYSIA: M=2.36 for secondary, 2.75 for primary; CHINA: M=1.53 for secondary, 2.37 for primary). In fact, in Malaysia, followed-up interviews found that teachers preferred to source their own video clips of teachers through YouTube, they claimed that the government resources were not interesting. Sending learning materials and homework through Apps such as WhatsApp, WeChat or Telegram was popular among both Malaysian and China teachers (MALAYSIA: M=3.48 for secondary, 3.25 for primary; CHINA: M=3.67 for secondary, 3.70 for primary), they claimed that the apps were more convenient and versatile. There are cases in Malaysia where small classes teachers were teaching using WhatsApp. In China, it is the primary school that uses apps more than the secondary school, this is the opposite of Malaysia. This may be due to the academic pressures that secondary school students face, where teaching and learning mainly focus on textbooks and workbooks.

Lectures still predominated the lessons, especially for secondary school (MALAYSIA: M=3.66 for secondary, 3.40 for primary; CHINA: M=3.89 for secondary, 3.78 for primary). In terms of organization of curriculum, lessons were mostly taught according to topics in textbooks (MALAYSIA: M=4.55 for secondary, 4.70 for primary; CHINA: M=4.88 for secondary, 4.87 for primary), Malaysian primary schools were taught more frequently according to topics compared to secondary school, for China both secondary and primary were taught a lot according to topics in the textbook. Cross-subjects were not often used and students did not seem to like the idea, they still preferred following the topics in the textbook.

In terms of the usefulness of experience, face-to-face was most preferred (MALAYSIA: M=4.61 for secondary, 4.55 for primary; CHINA: M=4.43 for secondary, 4.65 for primary), followed by real-time online teaching. There was not much difference between Malaysia and China, but Malaysian secondary school teachers preferred face-to-face more than primary, and it is the reverse for China.

#### 4.2 Level of Satisfaction

Teachers generally have higher overall satisfaction with HL compared to students (MALAYSIA: M=3.55 for secondary teachers, 3.16 for secondary students; CHINA: M=3.27 for secondary teachers, 3.21 for secondary students). At the same time, Malaysian primary students have slightly higher satisfaction compared to China primary students (MALAYSIA: M=3.34 for students, CHINA: M=3.12 for students). Preschool teachers in both countries showed lowest satisfaction (MALAYSIA: M=2.84, CHINA: M=2.90), consistent with interview data where preschool teachers were stressed about how to reach out to children and deal with parents. Data obtained from interviews was consistent with survey results. Flexibility for learning, personalized learning, enhanced technology skills, resource accessibility, and cost-effectiveness were reported as reasons for satisfaction.

Satisfaction with HL was found to be related to the perceived efficiency of the online platform. Teachers and students reiterated they experienced an improvement in their technology ability and their problem-solving ability (Ramdhani, 2020). Ramdhani (2020) found that students became more active in solving problems with the help of gadgets during the pandemic. Sumiyati's study (2021) discovered that this pandemic made the ability of teachers in the ICT field improve rapidly. Researchers such as Agustina and Cheng (2020) explained that only young educators can be more proactive in using technology to operate in various virtual learning environments.

#### 4.3 Factors Influencing Hybrid Learning

##### 4.3.1 Interaction

Teachers valued interactions with students, they regarded engagement with students as an absolute necessity in teaching and this was their primary source of anxiety, as shown in the following quotes.

"I need to interact with my kids face-to-face. This interaction helps establish a good teacher-student relationship. You know, that's also a part of teaching and learning." (T76, China Pri School)

"It is a bit more difficult to ask educators questions if we do not fully understand what is being taught. Besides that, it can also be a bit stressful to learn at home. Finally, asking for help for studies from your peers or friends also becomes more difficult as there is no face-to-face communication." (S20, Malaysia Sec sch stu, RL)

The need for bonding is what teachers yearned for, which they believed difficult to achieve through online learning, as shown in the quotes below:

"...my teaching sessions sometimes become ineffective, as they lack personal touch and effective interaction with the children when the lessons are fully online lessons. I believe nothing compensates the physical bonding between teachers and children, in which children can be engaged more naturally for learning." (Malaysia Preschool Principal and teacher, KS)

"Teaching online makes me feel like talking to the camera. It is not easy to catch students' responses immediately as in face-to-face classes. I feel distant from my students. It makes my interaction with students rather difficult. You know, lack of instant responses." (T89, China Sec School)

This result concurs with the claim that the teacher-student bond influences success (Valiente et al. 2019), and this bond is necessarily weakened in distance education. Researchers put forward strategies to interact with students in learning, such as asking oral questions

frequently and providing in-class exercises throughout lessons as well as setting class participation rules for new online learning students (Li et al.2023)

#### 4.3.2 Aligning teaching with curriculum

As the captain in the class, teachers need to know what to teach, which is not provided by the Ministry of Education and School Management, something which they were frustrated especially during the initial period of lockdown.

"With limited time during the reopening of schools, where students take turns to come back to school and limited time, what subjects and topics to teach was our concern, how to align with the curriculum, how to do it in Google Classroom, physically, online, and offline, we needed guidance and clarification" (Teacher Fong, RL)

Prior research has made similar findings. For example, a study on curriculum responses to the crisis indicated that at the onset of the lockdown period, the global education system was in the emergency phase. With rapid closure of schools, education systems put in place temporary distance education measures targeted for emergency measures which are not necessarily part of a clear plan of action, aimed at minimizing the negative impacts on students' learning during the lockdown time (Charland et al., 2021)

#### 4.3.3 Technology and gadget

Issues regarding connectivity and devices predominated the open-ended questionnaire, it relates to both supporting students and teachers.

"Support for students: getting students ready: we have to get them ready, gadget issue, most students use the phone when we try more fun features to teach, but with limited gadgets, they can't use it, they will be left out." (Teacher Nancy, RL)

"At the beginning stage, some teachers, especially those beyond 50 years old, could only conduct classes by document-sharing via WhatsApp and voice messaging. They were afraid of using digital products and digital platforms. But after about 7-8 weeks, they are okay already." (Malaysia: Secondary Teacher T1, IBE)

This finding aligns with Weitzel's study (2015) that technology itself is a crucial factor: a bad connection or even failing to connect can be frustrating for users. Researchers agreed that teachers' competence in using technology influences quality of teaching (Zydney et al., 2019). There are many studies supporting the claim that distance education poses challenges for the significant number of teachers who are uncomfortable with lack training in the use of technology (Dede 2020; Lollia and Issaieva 2020). Thus, equipping teachers with technical competence is important to conduct HL.

#### 4.3.4 Lack of motivation and self-discipline among students

Among the most quoted challenges cited by teachers and students in the open-ended questionnaire is a lack of self-management skills which include self-discipline and motivation as uttered by teachers below:

"Students' motivation is compromised when they can't move around. Learning in front of the computer screen for a long time causes screen time burnout, and when they have to complete learning tasks within a short timeframe, it can be very challenging." (Secondary Teacher T3, iBE)

"Well, learning online demands more self-discipline from students. Students must be attentive to follow class remotely. However, primary students' concentration spans do not allow them to be fully attentive. Students in lower grades also need their parents' supervision." (T12, China Pri School)

"Experiencing real-life lectures helps me fully concentrate. The teacher can see you and interact with you at any time. But watching recordings at home, I always find I do not have the motivation." (S81 China Sec school stu)

Both teachers and students in Malaysia and China reported that self-motivation, self-discipline, and self-organization affect quality of teaching and learning as children must learn how to use the internet wisely. A study on the low level of interaction, engagement, and motivation among students from online classes showed the importance of students' self-regulation (Kohnke, 2021). This is supported by Qotrun et al. (2021) who claimed that the effect of using technologies and social media must be balanced with wisdom and maturity, so students can balance study and play.

#### 4.3.5 Parental support

Parental support is crucial as shown in the quotes below:

"I noticed that the involvement of the parents in hybrid learning is crucial. Young students need to be monitored closely. They need the company of the adults in their learning activities. When conducting experiments at home, for example, children need to be supported by the adults." (Malaysia Preschool Principal CZ)

"Parent involvement is so important. They (parents) are my trainer at home (for my students)" (Malaysia Preschool Teacher YK)

Numerous studies supporting the claim that parents play an important role in HL (Đurišić and Bunijevac 2017; Charland et al., 2021). Thus, parents have been asked to assume a coeducational role during the pandemic. However, some parents may find it difficult to support their

children's learning, especially if their resources and educational level are limited or if they have no alternative but to continue working (Arvisais et al. 2020; UNESCO 2020). To support parents in these challenging roles, teachers must use their professional judgment and consider every family's particular situation (Charland et al., 2021; Li et al., 2021).

## 5.0 Conclusion& Recommendations

The main lesson learned from HL was that schools were not ready. Although many schools have already been equipped with internet and computers, they were not enough to be shared by all students, careful planning is needed to share these resources among all students. Not to be taken lightly students need their devices in the vicinity of their home. Computers and internet do not work wonders and teaching online does not mean teachers just transfer their normal way of teaching in physical classrooms to online, students in this study yearned for more interesting pedagogies and engagement in the virtual spaces. It can't be assumed that students will right away get into the mood on HL, although they are Gen Y and Gen Z, they use internet mainly for social activities not for learning.

The findings of this study concurs with the Theory of Community Inquiry as HL without social presence is like a three-legged chair without a leg and would fall. Teaching presences were not felt in the virtual space as students lamented lack of interaction and teachers were also grasping with issue of students' engagement. It is not that online learning does not have the social presence and teaching presence, but it is more of these were not carefully and creatively thought of and designed by the teachers and school management. In a nutshell, lessons learnt is not to take for granted that HL will be effective just by placing the teacher and students together in the virtual spaces but in making more effort to fully optimize the space of physical and virtual classroom so that HL can be meaningful and effective.

HL long-term impact to the education fraternity needs to be deliberated in a broader context considering various perspectives.. Thus, recommendations from findings of this study include realizing the importance of designing HL for personalized learning experiences, potentially improving student engagement over time, one main finding of this study. On top of it, HL provides a good platform to experiment on integrating emerging technologies like AI into education, however, training of teachers and availability of resources are essential. For the study to be more meaningful, a long-term study can be conducted with more shared parties' experiences from learners, teachers as well as parents as they deal with the learning loss together.

## 6.0 Limitation of the Study

First limitation concerns timing of data collection which lasted for 3 months at the tail end of COVID-19, it would been better if data collected done earlier when the pandemic was having the largest impact. Second limitation was respondents included only those who were willing to participate and not based on representative statistical sampling. Therefore, findings of this study may not be generalized.

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