EXPLORING MISSING LEARNING PHENOMENON IN PRESCHOOL SETTINGS DURING COVID-19 PANDEMIC: TEACHERS' PERSPECTIVES

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ABSTRACT

Purpose –This study aims to explore the missing learning phenomenon due to school closures during the COVID-19 pandemic in preschool settings from teachers' perspectives in Selangor, Malaysia. Related studies have shown that missing learning phenomena from different settings leads to delayed literacy development and raises the risk of dropping out among children. There is a lack of in-depth documentation on the missing learning phenomenon among preschoolers exploring the socioecology of preschool settings in a local context.

Methodology –This research employed a case study approach. In-depth interviews were conducted with six preschool teachers from Selangor, Malaysia, using an inductive approach for a holistic understanding of

the missing learning phenomenon during the COVID-19 pandemic. The data were analyzed using Computer Assisted Qualitative Data Analysis Software (CAQDAS), NVivo version 12 software, which mapped the findings to understand further the ecosystem behind the preschoolers' absence of learning during the COVID-19 pandemic.

Findings – Three major themes were revealed from the data: the missing learning demographic, socioecological factors, and mitigation plans. Several sub-themes (the compensative learning solutions, the demographic of impacted people, the delayed progress, teachers' readiness to facilitate online learning, engagement towards online learning, revised syllabus, personalized learning, and parental involvement) are classified under the respective major themes. Several main categories also emerged from the themes: lack of experiences and technology-pedagogical knowledge, unavailable online modules, low readiness to utilize online learning, unsupportive family climate, and accessibility. Learning intervention and online engagement with pupils during the pandemic are crucial in ensuring a successful continuous education.

Significance – There is also a need for comprehensive remote instructional modules that consider socioecological actors – parents and home climate; in the future and the enhanced instructional technology competency among preschool teachers.

Keywords: COVID-19, missing learning phenomenon, learning loss, school closure, preschool, Malaysia.

INTRODUCTION

The first case of COVID-19 in Malaysia was reported on January 25, 2020, followed by the second wave on February 27, 2020 (Abdullah, 2020). Concerned with high local transmission cases, the government enforced the Movement Control Order (MCO) as one of the containment measures on March 18th, 2020 (National Security Council, 2020). The MCOs prohibited mass gatherings, resulting in physically closed educational institutions and schools (Prime Minister's Office of Malaysia, 2020). Whilst unavoidable, emergency school closures due to infectious diseases, civil wars, and natural disasters have been practiced worldwide. Most of the studies found that a prolonged period of school closures created a missing learning phenomenon and widened academic inequity, thus pushing children into socioeconomic difficulties, particularly in less developing

countries (Ghosh et al., 2020; Gupta & Jawanda, 2020; Van Lancker & Parolin, 2020; Haleemunnissa et al., 2021). The missing learning phenomenon shares a similar definition with learning loss, as stated by UNESCO et al. (2021) - days without attending formal school settings for lengthy periods that cause losses in learning, including literacy and numeracy skills. In a relevant investigation conducted by UNESCO et al. (2020), it is estimated that 53 percent of children before the COVID-19 pandemic were facing a learning crisis, including missing learning. After COVID-19, the rate is to rise by 10 percent. It is also found that 90 percent of learners had their education disrupted, with the most affected coming from marginalized and poor populations (Reuge et al., 2021).

Specifically in preschool settings, the missing learning includes the absence of routine and structure in early childhood education settings, severely impacting the children's social and emotional well-being (Egan et al., 2021). A projected model of reading ability among kindergarteners during COVID-19 school closures indicated literacy loss at 66 percent for those without formal in-person presence and 31 percent for those who attended the continuity education solution (Bao et al., 2020). Besides, the preschool settings provide a socioecology system that is crucial for the development of preschool students' social, physical and psychology, including the development of fine and gross psychomotor skills (Bronfenbrenner & Morris, 2006).

Relating to Malaysia's preschool settings, several documented studies reported the experiences and challenges faced by public preschool teachers during the COVID-19 pandemic (Singh et al., 2022), student teachers' experiences during the pandemic (Muhaini et al., 2022), and experiences of parents including preschoolers' parents on handling their children's learning during COVID-19 pandemic (Zain et al., 2022). There is a lack of in-depth documentation on the missing learning phenomenon among preschoolers that explores the socioecology of preschool settings in a local context. Nikolaeva (2008) stated that the preschool ecosystem heavily depends on the interconnection between the children, the pedagogy (including methods and technology) and the organization that manages the process. Hence, through a case study approach, this study explores the missing learning phenomenon from teachers' perspectives following school closures that affect preschool students in Selangor, Malaysia. The research questions derived from the purpose of this study are:

1.   Which demographic was affected by the missing learning phenomenon in Selangor, Malaysia, due to preschool closure during the COVID-19 pandemic?

2.   What socioecological factors contribute to the missing learning phenomenon in Selangor, Malaysia, due to preschool closure during the COVID-19 pandemic?
3.   What are the plans taken to mitigate the missing learning phenomenon?

Theoretical Framework

This study adapts two theories that highly acknowledge the blocks of socioecological factors as guidelines – faucet theory and learning hysteresis theory. Faucet's theory corroborates the impact of socioeconomic level and parental involvement on children's education. Hysteresis is widely adopted in the economic field, especially in unemployment and international trade studies (Dosi et al., 2018). Cross (1993) defines it as "…are those that persist after the initial causes giving rise to the effects are removed" (p. 53). This study is then supported by the learning hysteresis theoretical framework proposed by OECD (2020) in guiding the research. The theoretical framework proposed that hysteresis on learning existed due to two major factors: intensive and extensive margin. The intensive margin refers to the efficiency of compensative learning solutions, whilst the extensive margin refers to the students' engagement towards the solutions (OECD, 2020).

Figure 1

The Theoretical Framework of the Study Adapted from the OECD (2020)
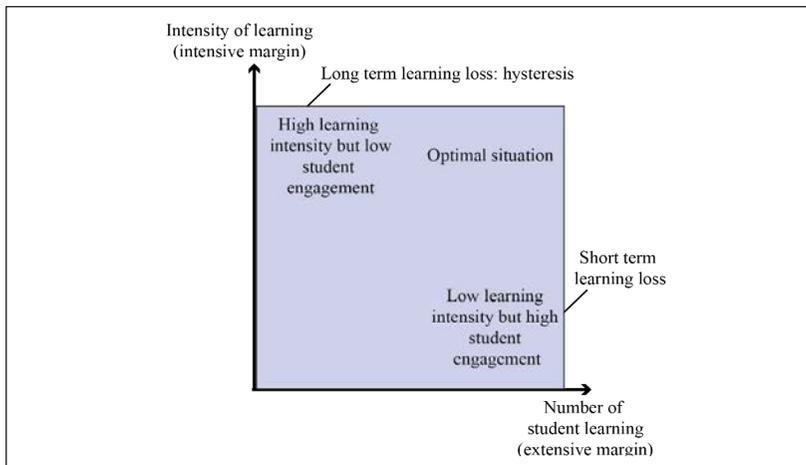
METHODOLOGY

Research Context and Participants

The case study was selected due to its nature and capability to generate background material that allows further discussion (Gustafsson, 2017; Thomas, 2011). Ritchie and Lewis (2003) elaborate that a case study will enable respondents to make meaning of their past experiences. In this study, the state of Selangor in Malaysia was selected as a location of the study due to its highest cases of COVID-19 in Peninsular Malaysia (Ministry of Health Malaysia, 2020). It has a diverse socioeconomic activity ranging from developed cities with construction, services, and manufacturing to agriculture consisting of rural paddy fields, palm oil, and fisheries (Department of Statistics Malaysia, 2019b).

Participants were recruited through purposive sampling, and the selected criteria are intended to provide a clearer understanding of the missing learning phenomenon across the settings (Marohaini Yusoff, 2001). The criteria are based on the preschool's location, ownership, and length of teaching experiences. This study selected six participants whose rights were rightly informed, covering the voluntary nature of the participation, anonymity clauses, and the right to withdraw participation at any interview stage. Six informed consents were acquired in oral and written submission before the data collection procedure. The six participants consisted of three teachers from government-administered preschools, and the remaining three were teachers from privately owned-preschools. Both urban and rural areas were equally represented with the three schools. Table 1 provides the details of the participants and their interview mode.

Table 1

Details of Participants

Participant	Experiences (Years)	Preschool Ownership	Location	Interview Platform
P1	14	Government (Ministry of Education)	Urban	WhatsApp
P2	13	Private	Urban	Face-to-face
P3	31	Government (Ministry of Women, Family, and Community Development)	Rural	Face-to-face
P4	6	Private	Rural	WhatsApp
P5	12	Government (Ministry of Education)	Rural	WhatsApp
P6	10	Private	Urban	Face-to-face

Data Collection and Analysis

This study utilized in-depth interviews through face-to-face and synchronous voice note sessions on WhatsApp. The participants chose their preferred platform to ease their anxiety since it was conducted during the MCO. The face-to-face, in-depth interview sessions were conducted at the headmistress' office with strict adherence to COVID-19's SOPs amidst the pandemic from September 20, 2020, to June 10, 2021. The average duration of each interview session was one hour and forty-five minutes. Each of the face-to-face sessions was recorded using an audio recorder whilst the voice message sessions were recorded using the voice note feature in WhatsApp. The researchers informed the participants about the recording and received permission before the interview sessions.

This study employed thematic analysis phases, as suggested by Braun and Clarke (2008), to guide the analysis process. They listed six phases of thematic analysis- familiarising the data, generating initial codes, searching for themes, reviewing the themes, defining and naming the themes, and producing reports on qualitative findings. The responses from the in-depth interviews were empirically analyzed systematically with a thorough and thoughtful process using Computer Assisted Qualitative Data Analysis Software (CAQDAS), namely NVIVO

version 12 software. The NVIVO software is significant in this study as it further ensures that the emerging and predetermined themes are consistent and coherent with the codes throughout the analysis. NVIVO can effectively link and map multiple of the entire analysis where codes were applied in each of the documents. Schreier (2012) further states that the consistency of the data would essentially ease the creation of coding frames, which are crucial in the data analysis process.

Trustworthiness

This study implemented two validation measurements- member checking and inter-rater reliability (IRR); to ensure that the trustworthiness of the data is observed. For member checking, the researchers followed the steps in Patton (2002). The audio interviews were transcribed and later emailed to all the participants accordingly. They were requested to verify the accuracy of the scripts. This study adopted the IRR assessment method proposed by McAlister et al. (2017). Two rounds of IRR sessions were conducted with two doctoral students from University of Malaya as coders. The process was completed when the IRR percentages reached 80 percent of the agreements.

RESULTS

The COVID-19 pandemic imposes a threat not limited to health, but progressively spread into all aspects of life, including the economy and education. The sudden school closures due to the COVID-19 pandemic have disrupted the teaching and learning process across the world and led to missing learning phenomenon. The result of the study led to the discovery of three themes and seven sub-themes, as illustrated in Figure 1.

Figure 1

Concept Mapping of the Result
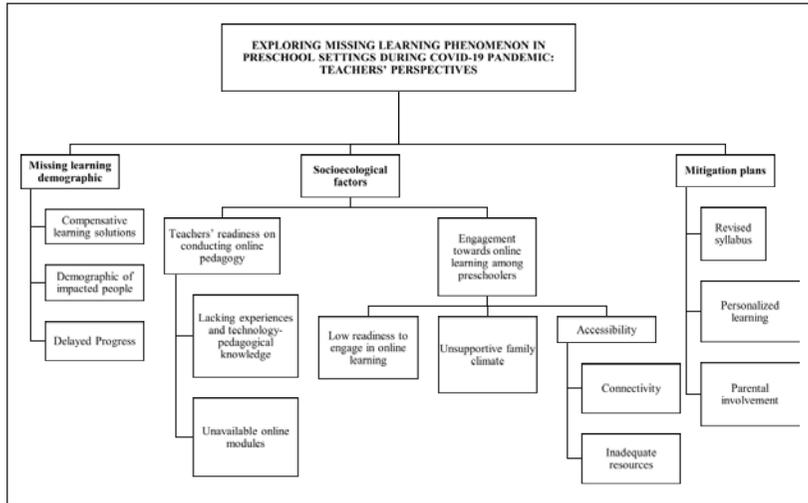
Three major themes were revealed from the data: the missing learning demographic, socioecological factors, and mitigation plans. Several sub-themes (the compensative learning solutions, the demographic of impacted people, the delayed progress, teachers' readiness to facilitate online learning, engagement towards online learning, revised syllabus, personalized learning, and parental involvement) were classified under the respective major themes. Several main categories also emerged from the sub-themes: lacking experiences and technology-pedagogical knowledge, unavailable online modules, low readiness to utilize online learning, unsupportive family climate, and accessibility.

The Missing Learning Demographic

This theme refers to the demographic of missing learning phenomenon. Three sub-themes collated under this theme –the compensative learning solutions, the demographic of affected people, and the delayed progress.

Compensative Learning Solutions

The sudden closure of physical schools required swift action to find compensative learning solutions. It is a crucial action to avoid

disruption in the teaching and learning process. In this case, all the participants stated that they switched to online learning when the mandatory school closures were implemented, as represented by a statement from P3:

> *"During five to six months [school closure], we received instruction from administrators to conduct online classes for our children [preschoolers] by sharing videos and all kinds of instructional videos, so that learning does not stop there."*

When asked about the online delivery platform, most participants stated that they resorted to messenger applications.

> *"I used WhatsApp. It is the easiest way."* (P5)

Meanwhile, P2 used Telegram in addition to WhatsApp and shared instructional videos through both platforms. Some participants were also found to make their instructional videos and quizzes.

> *"We recorded our teaching and posted the videos on the WhatsApp group. We also build online quizzes using Quizziz and Kahoot."* (P6)

However, participants from the Ministry of Education (MOE) used both instant messenger and Google Classroom to facilitate their online learning, as they were required to use Google Classroom as a primary teaching platform.

> *"I use Google Classroom [GC]. For Kementerian' [MOE] schools, we are provided with GC. I also used WhatsApp."* (P1)

Apart from online-based learning, some were adopting traditional ways of delivering their content when a high rate of absenteeism was detected during the online learning sessions. They deposited the printed learning modules on the preschool compounds, and parents were required to collect them.

> *"I printed the homework modules for my students. I left it at the security office and asked their parents to collect it."* (P1)

Demographics of Impacted People

The participants also explained that the type of students who are hugely affected by learning loss due to COVID-19 are those from urban areas, predominantly from blue-collar parents working in the private sector. The missing learning phenomenon affected most of the preschoolers and varied in terms of severity. The calamity of the pandemic affects the company's profit, directly resulting in the withholding, cutting, or delayed payment of salaries and wages. On top of that, participants also informed that some parents lost their jobs due to the economic slowdown during MCO. The affected students mostly come from the B40 family, indicating these groups belong to the bottom forty of the national socioeconomic strata with a household income of less than RM4849 monthly (Department of Statistics Malaysia, 2020).

> *"The severely affected preschoolers are from B40 families."* (P1)
> *"Most [are] sales assistants [at] shopping complexes and fathers who are working as general workers. Some are working as drivers."* (P1)
> *"There are also B40 parents forced to take unpaid leave. Some with halved wages. Some lost their jobs. Some with no OT [overtime] claims. They are working with private companies and factories."* (P2)

Besides, families with fathers who are the sole breadwinners, either self-employed or conducting small businesses, are also impacted in urban areas due to COVID-19. Some were classified as M40 households before the pandemic hit the country, and the unprecedented plague further accelerates the crisis.

> *"I also noticed that the affected [students] from my preschool are children of self-employed parents. It is even worse for those with housewife mothers. [For example] fathers who have a restaurant, [working as a] tailor. Mothers are not working. Some of them were categorised as M40 households before this [COVID-19]. Not only B40 families."* (P6)

However, in rural areas, the characteristics of the affected households are still represented by the parents with traditional work, whilst the mothers are housewives.

> *"Mostly fishermen. Paddy farmers. The mothers are housewives and selling cakes. Daily wages. They have been living here for generations. There are also immigrant parents, and some of them are undocumented."* (P3)

Delayed Progress

When enquired about the estimated rate of lagged educational progress, the participants unanimously stated that the affected preschoolers lagged around six months of learning, including a month before the MCO started. A statement from P2 represented the finding.

> *"We are already out of track. For example, in January and February, we taught them the syllables /kv/. Then, MCO. School closed for more than six months. These kids [preschoolers] lose the same amount of learning. When school restarted, they forgot everything [the learning before MCO]. We need to repeat the lessons a month before the MCO. Other subjects, like science, are less [impacted], but they still lagged around [ermm] four and six months on average."* (P2)

It is expected to discover that online learning is selected as the main compensative learning solution during pandemics among preschool teachers. The feature of online learning that provides ubiquitous learning experiences allows the learning to be continued without the possibility of attending the physical school premises. The teachers experimented with diverse learning delivery platforms, from instant messaging applications to learning management systems. Apart from that, they were utilizing videos to facilitate online learning. It is recorded by Google Trends that between 18th March to 15th July 2020, Malaysia was ranked first in searching for Google Classroom (Ahmadon et al., 2020). Despite these initiatives, the missing learning phenomenon was demonstrated with an estimated six months of lagging in educational progress.

Due to the prolonged and abrupt school closures, the missing learning phenomenon inevitably widened the education inequity gaps and revealed a new hidden one in society. The recent poor urban dichotomy is due to the COVID-19 effects on the economy. Zal et al. (2021) define this new social incidence as situational poverty, which refers

to certain conditions that cause individuals to become suddenly poor. Instead of the traditional low-income social strata – often defined as those working in agriculture and received low academic attainment, the definition of highly impacted poor urban is those with higher education compared to the previous groups and their incomes affected by the mobility restriction induced by COVID-19 (International Bank for Reconstruction and Development, 2020).

The Socioecological Factors

Next, we uncovered two inhibited socioecological factors to the missing learning phenomenon among preschoolers. We found that the missing learning phenomenon is highly influenced by teachers' readiness to conduct online pedagogy and engagement towards online learning among preschoolers.

Teachers' Readiness for Conducting Online Pedagogy

Following the school closure, teachers were expected to seek compensative educational solutions to ensure learning was deliverable despite the shutting down of physical premises. From this sub-theme, the analysis yielded two categories: lacking experiences and technology-pedagogical knowledge and unavailable online modules. Teachers are left unprepared due to a lack of technology-pedagogical knowledge and experience in delivering content through online platforms. It was made worse with no specific online learning modules available during school closures. As for the teachers, they are unprepared to face this educational calamity, and the emergency school shutdown left them in darkness.

Lacking Experience and Technology-Pedagogical Knowledge

With teachers lacking experience and technology-pedagogical knowledge on handling online teaching, the compensative educational solutions lead to contested effectiveness. They stated that they chose an online platform to deliver content based on its reputation as the most renowned learning approach, although they had no previous experience utilizing it. Besides, most participants confessed that they received no professional training in facilitating online learning, especially during the pandemic. The professional training that both participants, P1 and P2, received when studying at the undergraduate

level was not practiced, and this further complicated the teaching processes.

> *"I have no experience conducting online teaching before. However, it is a popular way of learning (mmm), so I just used it."* (P4)
> *"We have never received any professional training for facilitating online learning."* (P5)
> *"I learned it during my years in university but never used it before."* (P1)

These factors could be traced to the loose academic credential requirements of becoming preschool teachers in Malaysia, which indicate that it is not compulsory to acquire a teaching certificate, whilst the minimum credential is *Sijil Pelajaran Malaysia,* which is equivalent to a high school certificate. Inadequate training on distance teaching before the outbreak was also detected among early childhood educators (ECE) in the Asia Pacific and Sub-Saharan region (Kaga & Bang, 2021). However, this is exceptional for preschool teachers from the Ministry of Education's institutions. The minimum requirement is a bachelor's degree in education, with educational technology as the compulsory subject (Ministry of Education, 2019). The application in the real world demands upskills in technology knowledge that contribute to effective online learning. Thus, there is a crucial need to conduct periodic instructional technology training among preschool teachers, and it is demonstrated that a lack of digital pedagogical knowledge lends difficulty in delivering reading instruction online. It complicated matters when the data from the findings revealed that literacy skills are the most impacted literacy area.

> *"The pandemic impact, as I said before, has impacts on the development of literacy and numeracy. This literacy is in terms of reading and writing skills. However, reading has the worst impact."* (P3)

Investigating deeper on the reason, participants stated that reading skills are a fundamental literacy area with highly challenging instruction; thus, most affected parents faced difficulty in tutoring their children.

> *"Reading skills are difficult because sometimes, the version we teach is different from the version of parents*

> *[teach]; the version that parents teach is a little less accurate. We used a phonemic approach. Most parents used a spelling approach."* (P1)

This problem was later aggravated by the high number of absentees during online sessions. Reading skills demand a continuous learning process, and absenteeism disrupted the flow of acquiring the skills, as reported by P4:

> *"Because reading skills need to be taught continuously and need to be conducted regularly. We are still finding ways to teach it effectively [online]."* (P4)

The lack of technology-pedagogical knowledge possibly lends the reason that reading skills are the most affected area of literacy, as the lack of technology-pedagogical knowledge among teachers is the obstacle to delivering it online. However, this is not an isolated issue when The State Collaborative on Reforming Education (2020) reported that teachers and leaders in early literacy fields have not embraced strong literacy instructional skills, especially reading skills.

Other than that, learning activities that involve psychomotor development were heavily impacted by school closures. Teachers faced difficulty in assessing the psychomotor development components among their students.

> *"I can instruct them to jump online. However, I can't assess their gross and fine psychomotor. I cannot see how they hold the pencils. How they run in a certain length. How far they can correctly jump."* (P6)

Unavailable Online Modules

Another factor that influenced the efficiency of the compensative learning solution is that there is no specific syllabus developed for online learning amidst emergency school closures:

> *"We never expected this [COVID-19]. We have not prepared anything for the students. Nothing, Dr. We received no specific syllabus for teaching and learning during MCO. We need to create it by ourselves."* (P2)

Lacking educational resources, i.e., specifically designed online learning modules and teaching guidelines during the pandemic, possibly exacerbates the stress on the teachers. Additionally, teacher cadres often needed more support from administrators when facing instructional issues during emergency school closures (Santos & Novelli, 2017). This led to most of the participants transferring the physical teaching and learning sessions into the online spectrum without considering the online pedagogy.

> *"As teachers, we write lesson plans every week. There are skills and content that we need to teach and then master by the students. The problem is that we are unsure how to deliver it online. Some contents are not achievable [to be delivered] online effectively. But, still, we need to do it online. Basically, we just do the same teaching but on WhatsApp."* (P1)

Engagement Towards Online Learning Among Preschoolers

As school physically closed and instructions went online, the participants found many of their students difficult to reach. From the data, we found several factors contributing to this low engagement among preschoolers: low readiness to engage in online learning, unsupportive family climate, and accessibility issues.

Low Readiness to Engage in Online Learning

The participants stated that although preschoolers are attracted to digital gadgets, their level of readiness to engage in online learning was still low.

> *"They are still children. So young. They love smartphones, gadgets, Ipad. But, when it comes to online learning, they need more than that. They need motivation to stay focused and engaged online. Most of them are not ready for that. Not just the kids [preschoolers]. Even me, myself. I found myself struggling."* (P4)

They also opined that it is difficult for preschoolers to stay focused during online sessions, given that the nature of six-year-old children is supposed to be sociable and playful.

> *"Online teaching is, the problem is, to gain the students' attention. To ask them to focus is not an easy job. They like to play around. Kids will be kids. They might be good at using gadgets, but yes, still, they have problems staying focused online."* (P1)

Unsupportive Family Climate

While the unaffected preschoolers can continue their learning despite school closures, those heavily dependent on schools and teachers to learn will continue to be taxed. The level of dependency on schools and willingness to learn knowledge from teachers are high, especially for children in preschool (Erwin, 2004). However, with school closure, the learning condition is unmet and parental support becomes crucial. Unfortunately, not all students can receive familial support to pursue their learning at home. Thus, any school disruption will wipe out their chances of getting a good education since their home could not afford to compensate for it (Bayrakdar & Guveli, 2020). The unsupportive family climate towards online learning disrupted the education of preschoolers during the pandemic.

> *"Not all parents taught their children during MCO [school closure]. Many reasons for doing so; some told me they did not have a chance of doing that, and some didn't know how to teach their children. Many reasons. No matter what, these affected the children. They lagged. They might be left behind in terms of their education."* (P5)

The MCO restricted mobility and confined people to their homes. Most of the affected students in urban areas were forced to stay in congested houses with their big families. This creates an inconducive environment that deters the children from following learning sessions. In addition, there are some cases, especially in urban areas, where economically affected parents were juggling extra jobs to supplement their high living costs. Thus, discrete time is left for them to focus on their children's learning.

> *"I went to their [students] houses. Some houses. Yes, big family. There are three or four families living in the house. Their uncles, aunts, cousins, and grandparents*

live in one house. Some [students] have many siblings. Seven, eight siblings. Congested. How can they learn [effectively] in that situation?" (P2)
"Many parents do extra jobs. GrabFood riders, selling food. They are busy working to meet their needs. They barely have time to monitor their children's learning." (P1)

Accessibility Issues

Online learning is highly dependent on technology resources to thrive, and the findings indicate that accessibility issues arise within the context of connectivity and inadequate technology resources.

Connectivity

The declining rate of household income due to the COVID-19 pandemic created a vulnerable situation at their home. This might lead to an unexpected survival issue; parents need to prioritise spending more on food and rent and less on educational purposes, especially when it involves technological requirements. Although the government provided free internet from 8 am - 6 pm daily during the MCO, the speed is considerably slow. A good quality internet connection often requires a high rate of subscription fees, and this probably deters parents from accommodating their children's learning needs. The teacher participants stated that low internet speed is a common problem faced by the parents of preschoolers in both urban and rural areas. Most of the affected students, regardless of the location, were not able to participate in synchronous online sessions due to the low speed of mobile data connection:

> *"The problem is a bad, slow Internet connection. I can't conduct live video sessions. Because most of my parents [students' parents] are from B40."* (P1)

Besides the speed issue, unstable mobile data connection was also the culprit behind the low engagement from the rural students:

> *"For those living in [palm oil] estates, they have internet problems. Sometimes, they don't have access at all, especially on rainy days."* (P3)

Inadequate Technology Resources

Another finding is the inadequate technology resources among the affected households. The participants also acknowledged that this issue is more prevalent among preschoolers from big families since they need to engage towards online learning simultaneously. Besides that, big families were disabled from effective online learning monitoring by the parents, and it is often tracked to inadequate technology resources.

> *"Many siblings, right? The eldest brother and sister have online classes at eight in the morning. They will be sitting big exams. At home, there are only two handphones [smartphones]. Most of the time, the youngest one missed the class. But I saw the efforts. The struggle. Yes, I felt sorry."* (P2)

Further exploring the factors behind the missing learning phenomenon, the study found that teachers faced instructional crises due to their lack of technology-pedagogical knowledge and experiences in integrating technology into their teaching. Apart from that, low engagement towards online learning promotes absenteeism and creates learning hysteresis among disadvantaged preschoolers. This is supported by the faucet theory in which Entwisle et al. (2001) stated that when school was in session, the resource faucet was turned on for all children, and all gained equally; when school was not in session, the school resource faucet was turned off. Thus, children from disadvantaged households will continue to lose out on their learning due to restricted access to school and resources. When this happens, it imposes the risk of delayed progress and dropping out among the affected students unless appropriate action has been taken.

The Mitigation Plans

The school reopening has revealed that missing learning phenomena among preschool students in Selangor were significant enough to impose a red alert. The teachers noticed the need for a mitigation plan to reduce the missing learning impact. However, the execution of mitigation plans was heavily dependent on the administrators of the preschools. We found that the teacher participants have revised the syllabus, implemented personalised learning approaches, and called

for more active parental involvement - as ways to mitigate the missing learning effect.

Revised Syllabus

All the participants stated that they revised their syllabus following the instructions from administrators. This revision plan enabled them to focus on the lagging fundamental skills - especially reading skills. Additionally, the participants viewed this step as an essential mitigation plan for all preschoolers regardless of the level of learning loss since it helps promote balanced academic progress.

> *"We revised the syllabus according to the level of students' losses. Everything from our syllabus, lesson plans, and frameworks. Any parts they have lost, for any subjects, we include in the current learning sessions. We combine the lessons. We emphasise more on the important lessons and combine the less one into it. We simplify it so that the students will be able to catch it during school sessions starting from 1st July."* (R1)

Personalised Learning

Along with the syllabus revision, most participants from private-owned preschools have taken further initiative to conduct personalized learning with their severely affected students. The participants and their co-workers spent an extra ten minutes outside the school's instructional hours on each affected student.

> *"For those who were severely impacted, we conduct one-to-one sessions every day. We teach them for an extra ten minutes after school hours. For those who come earlier, we use the time to teach them. There were around nine, ten students that needed extra help."* (P2)

Parental Involvement

On top of that, they demanded parental involvement during personalized learning by giving them instruction to support learning sessions at home. This extra effort has yielded positive results, especially from the severely affected students with cooperative parents.

"Once we identified them [severely impacted students], we were also reaching out to their parents. We asked them to focus more on their children's learning at home. We coach them on how to teach reading. Although not all are willing to commit religiously, the plan shows positive outcomes. It helps us to minimize learning loss. Most of them [parents] are worried about their children's progress." (P2)

CONCLUSION

The sudden school closure due to the COVID-19 pandemic in Malaysia visibly affected preschoolers, especially those who come from disadvantaged and affected households. During the first phase of school closure, the estimate of six months of missing learning was detected. Although the teachers and parents worked diligently to recover the losses, the efforts halted each time school closures were implemented. This study is important since it discovered crucial needs for learning interventions starting by the 2021 school academic year, especially for the first graders in Malaysia. It should not be limited to pedagogical intervention since the pandemic affected the psychosociology of the students too. Besides, this study should be able to inform the researchers and practitioners of important features in designing online learning modules for preschool education. Those modules should consider the involvement of parents in the learning ecosystem. The findings also implicate the need to emphasize distance and online teaching skills during pre-service teachers' training. It is also a fundamental move to invest more in developing quality early literacy instructions at the national level, regardless of preschool ownership. The recommendations proposed are essential as preparation to mitigate the losses nationwide level and minimize the impact of the missing learning phenomenon. It also served as a preparation for emergency school closure in the future.

ACKNOWLEDGMENT

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Appendix

RQ	Research Questions	Interview Questions
1	What compensative learning solutions were taken during the school closure due to the COVID-19 pandemic?	What is your experience as a teacher?
		Which party was impacted by the school closure during COVID-19 on the schooling system?
		Can you tell me about the students' experiences when school closure during the COVID-19 happened?
2	Who is affected by the missing learning phenomenon in Selangor, Malaysia, due to school closure during the COVID-19 pandemic?	Does the problem have an impact on students until today?
		Who are the parties other than the students impacted by school closure during the COVID-19 in this school?
		How does the school closure during COVID-19 impact the students' learning? a. in terms of affective b. psychomotor c. cognitive
3	What factors contribute to the missing learning phenomenon in Selangor, Malaysia, due to school closure during the COVID-19 pandemic?	How do you see the progress of the student's learning following the school closure during COVID-19?
		Based on your experience, what is the difference in student learning before and after COVID-19?
		How do you see school closure during COVID-19 as a challenge for teachers to deliver the learning content?
4	What are the plans taken to mitigate the missing learning phenomenon?	What solutions do you implement when students do not adapt well to the education continuity solutions?
		In the teacher's view, what other evidence shows the impact of school closure during COVID-19 on student development
		What is the teacher's advice to colleagues regarding the learning development after school closure during COVID-19?