

Education Gap during Emergency Remote Learning amongst Primary School Students in Selangor Low-Cost Flats

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Abstract

This study examined the root causes of the education gap for primary school students living in Selangor low-cost flats throughout emergency remote learning during the Movement Control Order in Malaysia (2020-21). It assessed the availability of resources and preparedness for teaching and learning during emergency remote learning and analysed the effect of emergency remote learning on teachers, parents, and students. The study was conducted in three low-cost flats in Selangor, Malaysia. Semi-structured interviews were conducted amongst 12 parents (3 focus group interviews) and three school leaders of these students, with complementary interviews from three selected Malaysian Ministry of Education officers (state and federal level). Thematic analysis was conducted on the interview responses using the CIPP (Context, Input, Process, Product) model framework embedded within the principal-agent theory. This study identifies positive input and processes throughout emergency remote learning, namely in content resources, flexible Ministry of Education guidelines, and proactive school leadership. It also evaluates the weaknesses in the education process, specifically in reporting communications and participation in online lessons. This study concludes with a two-pronged policy recommendation for short-term recovery and prevention and the long-term establishment of a robust online learning system.

Keywords: Education gap, emergency remote learning, COVID-19,
low-cost flats, primary school

Introduction

During the COVID-19 pandemic, many sectors worldwide, including education, were forced to adapt abruptly. In Malaysia, emergency remote learning was implemented as Home Based Learning or the *Pengajaran dan Pembelajaran di Rumah* (PdPR). Schools were physically closed for long periods. By and large, the mass public system managed to cope with the ever-changing situations, and learning still found its way, albeit online. However, not everyone was in the same boat, and emergency remote learning further widened the education gap between the rich and poor. The following section defines the various terms in this research for reader clarity, namely the terms ‘emergency remote learning’, ‘education gap’, and ‘low cost flats’. The author then highlights the problem of this study in three areas: the threat to the quality of learning, student dropout rate, and economic impact due to learning loss.

Literature Review

Emergency remote learning

Emergency remote learning is “...a temporary shift of instructional delivery to an alternate delivery mode due to crisis circumstances” (Hodges et al., 2020, p. 6). It is different from a robust online educational ecosystem; its curriculum structure was designed for face-to-face or hybrid courses, and such learning will return to its original intended format once the crisis or emergency has abated (Hodges et al., 2020). In comparison, online teaching and learning refers to carefully planned courses with built-in interaction methods between student content, the online learning community, and assessment methods (Hodges et al., 2020). Such design is intentional for online interactions with personnel and the ecosystem of resources, which takes time to build and is not an available luxury in crises (Hodges et al., 2020). In the context of Malaysian public education across 2020-2021, emergency remote learning was termed ‘Home-Based Learning’ (*Pengajaran dan Pembelajaran di Rumah*). For the purpose of this study, the terms emergency remote learning and Home-Based Learning will be used interchangeably, especially during interviews with stakeholders who are more familiar with the term.

Education gap

The education gap can be defined as the education access or attainment gap. The education attainment or achievement gap refers to the disparity in academic performance between groups of students (Ansell, 2004). This gap can be reflected in school grades, course selection, dropout rates, and school completion rates (Ansell, 2004). However, very often, by the time this gap is officially identified through reported statistics and scores, it is very late for

intervention. Due to the recent COVID-19 pandemic, the education access gap is a better measurement of the education gap. It is due to the limitations of long-term impact measurements on education achievement, although modelling can be conducted. However, the acknowledgement of the education access gap provides more concrete data on the disparity of future learning outcomes. In the case of emergency remote learning, the education access gap can be seen through the availability of specific resources (or lack thereof), such as a lack of digital infrastructure, conducive learning space, and adult academic supervision (McKinsey, 2020).

Low-cost flats in Malaysia

For the case study of students living in Selangor low-cost flats, many experienced considerable educational gap disparities during the COVID-19 pandemic. The *Projek Perumahan Rakyat* (PPR), or the People's Housing Project, is a specific government housing scheme to eradicate squatter areas throughout the country (Zawawi et al., 2015). Low-cost housing flats under this scheme are offered at below market rate prices, RM124/ month for renting and RM35,000 for purchasing. Residents of the low-cost housing flats generally earn less than RM 3,000 per household, many even less than the official threshold (Kementerian Perumahan dan Kerajaan Tempatan, 2012). Low-cost housing flats are typically less than 700 square feet for a 3-bedroom type, generally built to cater to a 5-person family (Goh & Yahaya, 2011). Most of the basic amenities are provided in low-cost flats; however, considering the number of households living in a flat, this is often not conducive for residents.

Poor quality of learning

As of May 2021, more than a year after the first lockdown, 88 percent of children within Klang Valley low-cost flats primarily relied on handphones from adults (UNICEF Malaysia & UNFPA, 2021). This proved a problem during the second Movement Control Order when adults could go out to work; the students no longer had access to their parent's handphones during the daytime (UNICEF Malaysia & UNFPA, 2021). It is also a problem for larger member households, where students share the device with siblings. It is worth noting that the average number of children in the B40 households surveyed is 2.2 children, with 36 percent of families having between 3-6 children (UNICEF Malaysia & UNFPA, 2020). This situation severely affected the students' quality of learning and engagement levels of Home-Based Learning.

Dropout rate

The low quality of learning resulted in a drop in motivation to learn and, ultimately, a higher percentage of school dropouts. A reported 7 percent of upper secondary school students surveyed from these Klang Valley low-cost flats were not returning to physical school after the first Movement Control Order alone (UNICEF Malaysia & UNFPA, 2020). A study from the Adab Youth Garage on 600 low-cost, flat students in Selangor in 2021 reported that 10.5 percent of students did not master essential reading, writing and numeracy skills, with 83 percent of this number of preschool and primary school age (Adab Youth Garage, 2021). Considering that basic literacy and numeracy schools are prerequisites to continuing to participate in formal education, these numbers can be considered at risk of dropping out of the school system shortly.

Estimated economic impact of learning loss

Depending on the effectiveness of remote learning compared to classroom learning, Malaysia's learning losses from the three periods of school lockdowns are projected to range between 5.4 months to 11.4 months (Ferlito et al., 2021). Learning loss leads to a long-term economic impact on the individual and, subsequently, the nation (human capital loss). Under the pessimistic scenario, Malaysia's learning loss could mean "a yearly GDP loss of around RM 80 billion" (Ferlito et al., 2021, p. 17). With the education gap experienced by students in low-cost flats, they will likely experience more pessimistic scenarios of learning losses.

Methodology

Fishbone analysis

There are several root causes of the education gap among primary school students living in low-cost flats throughout emergency remote learning.

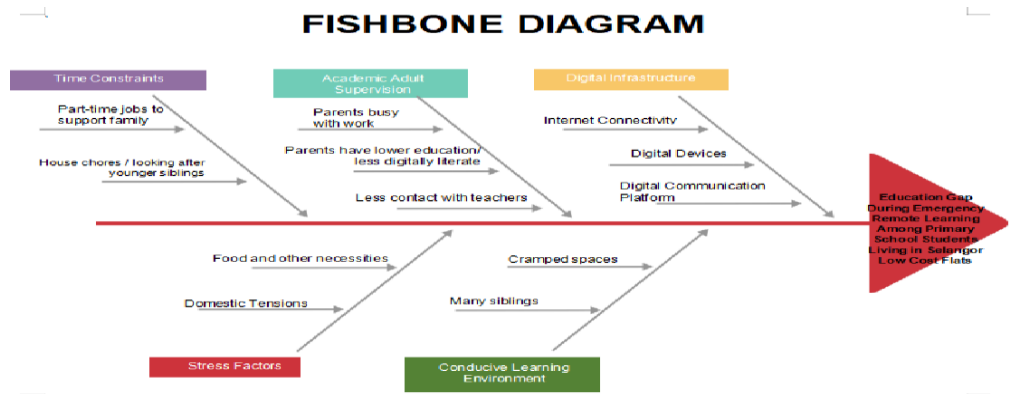


Figure 1 Fishbone Analysis of the Problem

Research framework

Two frameworks were used for this research. The first is the CIPP model (Context, Input, Process, Product) by Daniel Stufflebeam. This model is a systematic curriculum implementation evaluation and has been used in the context of online learning (Purwaningsih & Dardjito, 2021). Context evaluation accesses the beneficiaries, needs and environment in which a programme is implemented (Kellaghan & Stufflebeam, 2003). The input evaluation underlines the resources used during the implementation, including time, human resources, infrastructure, and budgeting (Kellaghan & Stufflebeam, 2003). Process evaluation examines the programme's running and the teaching and learning process (Kellaghan & Stufflebeam, 2003). Finally, product evaluation looks into the impact and effectiveness of the programme (Kellaghan & Stufflebeam, 2003).

The second framework is the policy framework of the Principal-Agent Theory. This theory discusses the social relationship between the principal actor (policy makers) and the agent (implementers) in the execution of a particular policy (Braun & Guston, 2003). In the context of the Malaysian education system, where the decision-making is heavily centralised, this situation provides homogeneity across education policy and challenges, and

*Education Gap Amongst Primary School Children During
Emergency Remote Learning*

ensuring programmes are implemented effectively across the many levels of bureaucracy in different regional contexts (Bush & Ng, 2019).

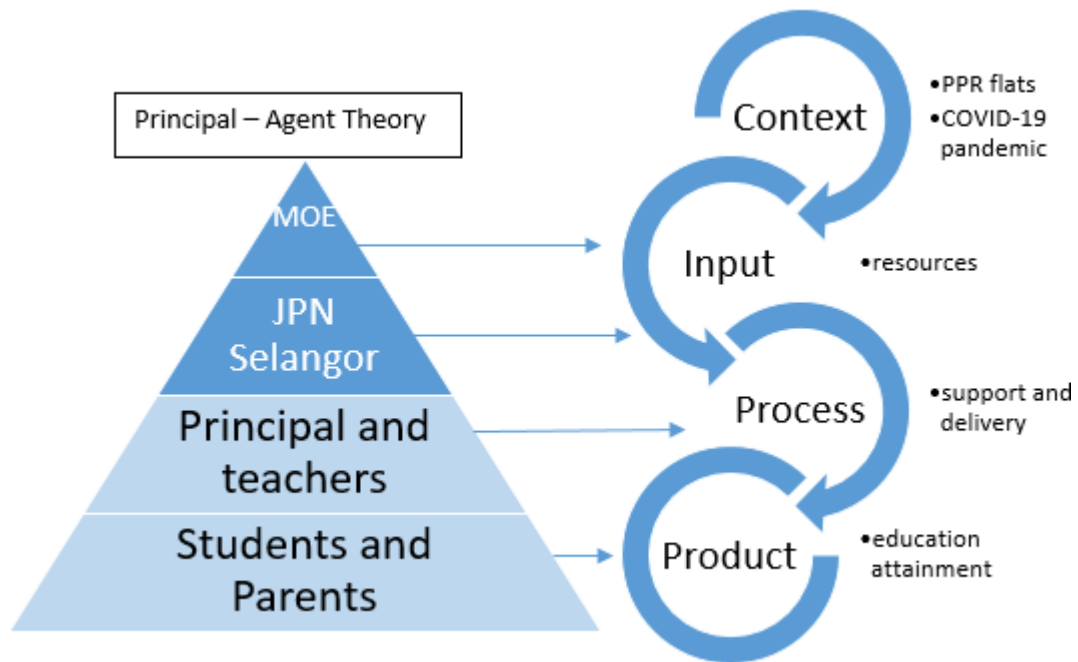


Figure 2 Theoretical Framework of the Study

Table 1 Framework, Analysis and Stakeholders Involved in the Study

Framework	Analysis	Stakeholder involved in study
Context	PPR Flats <ul style="list-style-type: none"> • socioeconomy background • learning environment • family conditions 	Parents of primary school students in PPR flats
Input	Devices, connectivity, learning platforms, learning resources	Federal and state level education department
Process	Personalised support, school coordination, delivery of lessons	School teachers and principals, state level education department
Product	Student education attainment – observations on literacy and numeracy skills	Parents and teachers

Sampling technique

Low-cost flats in Selangor were selected because despite Selangor being a high-income state (recorded median household income of RM 8,210 in 2019 (Department of Statistics Malaysia, 2019), resources for education are still lacking amongst its urban poor. Selangor is considered the state with the highest composition of urban population at 95.8 percent, and the most densely populated district (Petaling) with 4,719 persons per square meter (Department of Statistics, Malaysia, 2020). Such geographic demographic sets Selangor as a state ideal for the government's low-cost, flat scheme to house dense populations.

Table 2 Breakdown of low-cost flats under the *Projek Perumahan Rakyat* scheme in Selangor

Development Area	No of Floors	No of Blocks	No of Units	No of residents	Category
PPR Kota Damansara	18	4	1,152	4,608	Rent
PPR Lembah Subang 1	17	8	3,004	12,016	Rent
PPR Kg. Baru Hicom	17	3	980	3,920	Rent
Pangsapuri Seri Kiambang, Serendah	5	2	300	1,200	Rent
PPR Lembah Subang 2	13	5	1580	unknown	Owned

Source: Malaysia, Ministry of Housing and Local Government, 2012

Selangor households have an average size of 3.4 persons per household (Department of Statistics, Malaysia, 2020), while an estimated 17 percent of Selangor households are classified as bottom 40 (B40) households. The state of Selangor is also reasonably representative of the national demographics regarding race, with 58.7 percent of the population classified as Bumiputera (Department of Statistics, Malaysia, 2020). While various types of low-cost housing schemes exist in Selangor state, only five low-cost flats fall under the state-owned *Projek Perumahan Rakyat* (PPR) scheme in Selangor. This sample was selected for homogeneity of rental cost and resources available to its residents.

Four families were selected from three flats: PPR Kota Damansara, PPR Lembah Subang 1 and PPR Kg. Baru Hicom. The selection criteria for these families are that they must have at least one child in primary school, and all primary school children from the four families selected should be attending the same school. Snowball sampling often occurs when parents can

*Education Gap Amongst Primary School Children During
Emergency Remote Learning*

recommend other parents whose children attend the same school. They can often also recommend various teachers and principals from their child's school. Teachers or principals interviewed were sampled from the feeder schools for the respective low-cost flats. One teacher or principal was selected to represent each school around the low-cost flat. Education officers from the Policy and Curriculum Department and the Technology and Resource Department were also sampled purposively.

Table 3 Breakdown of Samples

Level	Number of Interviews
Federal and State Officers	3 (2 federal officers, 1 state officer)
School Principals or Teachers	3
Parents of Low Cost Flats	3 focus groups (4 parents per focus group)

Data collection and analysis technique

Focus group interviews were conducted with the parents of the primary school students in Selangor's low-cost flats. Semi-structured interviews were conducted with the teachers, principals, and officers mentioned in the sampling section. The conversations were analysed based on key themes that coincide with the CIPP model. These were then coded based on positive, negative, or mixed perceptions.

Results

Responses from focus group interviews

The following interviews were conducted between May – June 2022.

Table 4 Breakdown of Interviewee's Profiles

Level	Code Name	Position or Location	Additional Comments
Federal	MOE Officer 1	Department of Policy and Curriculum, Ministry of Education	
	MOE Officer 2	Department of Educational Technology and Resource, Ministry of Education	
State	State Officer	Selangor State Education Department	

Table 4 (continued)

School	Teacher A	Feeder School to Low-Cost Flat A	Note: the principal of School A was recently transferred out; hence a more senior level teacher within the school was interviewed
	Principal B	Feeder School to Low-Cost Flat B	
	Principal C	Feeder School to Low-Cost Flat C	
Low-Cost Flat	PA1 – PA4	Parents in Low-Cost Flat A	
	PB1 – PB4	Parents in Low-Cost Flat B	
	PC1 – PC4	Parents in Low-Cost Flat C	

Children's experiences and struggles throughout emergency remote learning

Nine of twelve parents across the three focus groups collectively answered their experience was mostly negative. Verbatims below are their feedback on the struggles with limited devices.

PB1: *All my children (with three school going children) are in different schools, different levels. So, when one uses my handphone, the other two will not be able to use. Then when we had a bit of help, we could buy one newer gadget, two of them could use it. So, I prioritised the secondary school one, the primary school one would have to await her turn.*

*Education Gap Amongst Primary School Children During
Emergency Remote Learning*

Interviewer: *Were there instances where because your children were borrowing your phone, there were times where they were unable to enter online class?*

PA4: *Yes because I am doing business right. Sometimes I have to WhatsApp or make calls, so I will have to take back the handphone.*

PC3: *...sometimes when the teacher is talking halfway then 'ekk' like that (indicating frozen screen) ... (in response to 50% of the time slow internet)... Ah about their la because you see my house is on the 18th floor, very slow. Concerning financial struggles to enable their student to participate in Home Based Learning.*

PB4: *...not all B40s in this low cost flat received government aid... we had to sell what we had for school. I dug out my savings... even though people say it is emergency savings for my children's future, I did not have a choice. And, during lockdown we did not have an income, my husband did not receive salary.*

PC2: *I spend so much money going to the printing shop to print stacks of worksheets from the teacher, but my child will only do 2 lines.*

Parents also mentioned students' struggles to keep up with Home Based Learning and their inability to support their children academically.

PB4: *For my primary school children, he doesn't really understand all the Google Meet stuff. I as his mother really don't understand. I don't know these things. When his (college-going) sister is free to help with all the devices then there is no problem; when the classes are concurrent with the sister's then it is a problem for him to enter Google Meet classes.*

PB3: *...if it is like the Bahasa Melayu subject, when the teacher teaches, maybe he can write. When the teacher gives work related to counting, answering questions, I definitely have to sit next to him.*

PB4: *When he does not understand he will try to ask us as parents, but we can't teach him, I'm serious I don't understand the syllabus. Even if it is primary school I am*

unable to teach my child using the syllabus as it is so different from last time. Even Standard 2 Mathematics I cannot follow. I don't understand it.

Naturally, there was also mention of the cramped learning environment for their children.

PB4: *We are PPR (low-cost flats). We need to understand, our house environment is cramped. We cannot provide a special place for our children to learn. The dining table is where they learn. The living room is the same place their siblings play.*

Emotional and education impacts faced by families and children throughout emergency remote learning

All parents collectively mentioned stress and worry from struggles to juggle many daily activities while looking into their children's studies. Children had low motivation and attention throughout Home Based Learning.

PA3: *I went through all kinds of emotions. Stress, worry for my child, don't know whether he can follow. We as parents too had a lot to manage.*

PB2: *If the teacher doesn't call his name mmm....(shakes head). Goodness knows where his mind will be.... my child will fall asleep during online class.*

Forms of support received from the school

There were mixed reviews on the support received from the school. Parents denied any personalised support from teachers or principals, but some said they could directly message the teachers if their children had questions. More often than not, parents perceived teachers as being swamped with classes and understood if teachers could not fully support their children's learning.

PC3: *I pity the teachers, too. They try very hard to teach, but it is on the handphone...and there are a lot of internet line issues. Not everyone can use Google class.*

When asked how their children cope if they miss online lessons, parents responded that there is no catch-up session during Home-Based Learning.

PC4: *There is no repeat. It continues forward. They cannot turn back (to repeat lessons).*

PB4: *(my child will) collect all his questions and ask his elder sister. If the sister cannot answer, he will wait until school reopens to ask the teacher.*

Interviewer: *Can he not WhatsApp the teacher?*

PB2: *This depends on the teacher. The teacher does say that if you don't understand, you may personally message the teacher, and the teacher will respond.*

PB3: *From what I see it depends on the teacher. If you get a good teacher, he/she will enter class every period...In 10, you will get 1 goodteacher.*

PB1: *For our class, coincidently there are a lot of teachers missing in action.*

Interviewer: *Do you think the teachers are missing in action because they have lost motivation?*

PB3: *I think the teachers are also undergoing the learning process on how to use gadgets.*

Interviewer: *are they old or young teachers?*

PB3: *Mid-range.*

Children ability to keep up with the lessons

Around three-quarters of parents report that their children are able to keep up with the physical lessons in school, with exceptions to certain subject matter (usually English or Mathematics) or certain age levels.

PB2: *My son in Standard 3 is okay; he can read, but only if his English is a definite fail.*

PC1: *My Standard 2 child cannot read yet. Different from her older brother and sister. She can count a little. It is the reading I am afraid of. Last time, when her elder brother*

*was six years old and could not read, we already felt it.
My third child is Standard 2, and I still cannot read.*

Responses from school principals and teachers

Below are summaries of the responses from principals or teachers at the schools regularly attended by the low-cost, flat children.

Experience throughout emergency remote learning

All three teachers and principals acknowledged that the limitations of devices and internet connectivity drastically affect student participation during online lessons.

Teacher A: *When it comes to the students, they have limitations in IT facilities, no handphone, no laptop. At the start, less than ten students attended each class. (out of 33-38 students per class)*

However, teachers and principals chose to dwell on the challenges rather than shift the focus to actions to remedy the situation. Principals, in particular, demonstrated leadership in coordination, finding resources, and motivating students.

Teacher A: *We took the initiative because we wanted students to be included. We created modules and asked students to collect them from the guard...the modules give examples of how to do the work. Students have to copy the steps and do the questions. Then, send (the modules) back, and we collect them.*

Principal C: *We did live (classes) with the students and recorded and posted them as messages through the WhatsApp groups. We asked for sponsors from various individuals...laptops, PCs, handphones. We did surveys to ensure they were distributed to those in need.*

Principal B: *We worked with the PIBG (Parent Teachers Association) to obtain funds. Teachers helped the students obtain devices.*

***Difference in efforts throughout emergency remote learning
versus prior to emergency remote learning***

There was a reported increase in administrative workload and teaching preparation.

Teacher A: *We had to submit reports every day explaining why students were absent. I cannot write the same reason every day, right... Sometimes, they will request reports twice—once from the district education office and once from the State Education Office. The information is about the same.*

The main difference highlighted was in attendance, making it difficult for teachers to gauge academic performance.

Principal C: *Regarding attendance, we sent out the link, saying for 8 a.m. We do not get full participation... but it is not as bad as 50 percent. About 75 percent will attend online.*

Teacher A: *For academic assessment, I can put at least 3 (grade point for 'concept has been grasped'). The District Education Office will say, 'If possible, do not put less than 3.' The problem is the absent students. We follow the previous records and average out.*

Forms of remedial efforts to help address students' learning loss

All schoolteachers and principals highlighted the Ministry of Education's PerkasaKU Catch-Up plan as applicable.

Principal B: *My PK1 (assistant principal 1) did CUP 1, CUP2, and CUP3. When we began, many students were behind. In Mathematics, 20, 30 or 40 (in a class placed under the Catch-Up Plan). A lot could not pass. However, when we started the programme this 1 – 14 April (2022), with exercises, we saw a drop (in those needing monitoring). There are still those. However, there is a decline. 30 down to 10.*

It is important to note that with schools resumed physically, all students appear to have returned. This was highlighted in School B.

Principal B: *The attendance for the first week of April (2022) was 80 percent. $.2,500 \times 80$ percent means 500 students not coming.*

Forms of support received from the Ministry or State Department

Most of the support from the Ministry of State Department came from content resources and training.

Teacher A: *We have (materials) because we have a website, you know, from the Curriculum Development Department. They put all the modules Different apps can also be used. The government also gave teachers some allowance. Teachers also share their resources with each other. To me, it makes it easier for other teachers.*

Responses from the state and federal officers

Below are summaries of interview responses with state and federal-level education officers.

Difference in budget allocation for educational resources pre-pandemic versus during emergency remote learning

There was a reported increase in budget for developing digital education content, but not necessarily in other areas.

MOE Officer 2: *Didik TV is a massive thing. There was a budget coming in. It is not a shift, so extra allocations were needed to bring in Didik TV. A lot of initiatives had to be carried out to assist the teachers in school.*

MOE Officer 1: *Our allocation is for face-to-face lessons. However, when the pandemic came, we didn't... that first year, we did not know how to use our money. So, we returned the money to the government that first year because nobody knew what to do in the first year.*

Resources made available to teachers and students

Teacher support came in three forms: teaching content, teaching and learning guidelines and digital training.

Education Gap Amongst Primary School Children During Emergency Remote Learning

State Education Officer: *KPM, also under platform DELIMa, has one site, Bahan SumberKu, if I am I am not mistaken, by other teachers from around Malaysia, meaning other states all over Malaysia shared their uhm, materials in that in that platform as well for all subjects, I would say. That one is for all subjects, yeah.*

MOE Officer 1: *For schools that could not access online learning, we provided material for teachers to share with their students.*

MOE Officer 2: *We started running TV Pendidikan (Edu TV) again. It was a challenge, but we managed to make it.*

State Education Officer: *We did (training) on Meet... that time, we can do like a maximum, I think is 250 last time... but then we can do live stream... the live streaming... about 500 to 700 (viewers).*

Challenges faced in providing support for teaching and learning

Officers needed to work on areas of communication and reporting compliance.

MOE Officer 1: *This is my personal opinion. MOE is too big—too many departments. We focus on the policy. We focus on the thinking part. So, the department doing the work is the other department. So, our ideas did not convey 100 percent, you know. The information along the way got distorted, and some did not reach the teachers. When it reaches the teachers, the instruction is different.*

State Education Officer: *You know, there are issues that whereby teachers are stressed because they need to fill in this and that, you know, like we have to do reports of their PDPR and everything... sometimes teachers, they have done so many efforts but yeah, there is no documentation, so somehow we need to have something like to back up the teachers as well... they need to be informed of what they are doing and of what*

we are trying to help so that teachers do not feel like stress out, demotivated and everything.

When asked whether teachers will continue using digital skills after returning to physical learning:

State Education Officer:...*I think the most probably... They will go back to their usual... It is because of the preparation, you know, to set up the laptops... LCD and everything...it takes time, and I don't think that all teachers are willing to do that.*

MOE Officer 1: *No, I do not think it is time for our teachers to move to online learning. We still have teachers not used to computers. We have a generation gap between the teachers. If you want me to take a guess, maybe in 10 or less than 20 years (for teachers to be ready to teach online) because the current generations are taking place in schools. So, wait for them to phase out la.*

Discussion

Several recurring themes run through the different layers of interviews with education policymakers, implementers, and recipients. They are listed as follows:

- 1) Lack of Digital Resources
- 2) Absence of Parental support
- 3) Cramped Learning Environments
- 4) Support for teachers and teacher preparedness
- 5) School Leadership
- 6) Reporting and Communication across the layers
- 7) Participation in Online lessons
- 8) Learning loss and other forms of impact

The various themes are categorised under the respective components of the CIPP implementation model. The number of respondents who spoke on each coded theme is listed as (x), with x being the number. Based on the positive or harmful descriptions or feedback analysed from the data, these are colour-coded into the chart below. (Red – negative perception; Green – positive perception; Yellow – mixed perception)

*Education Gap Amongst Primary School Children During
Emergency Remote Learning*

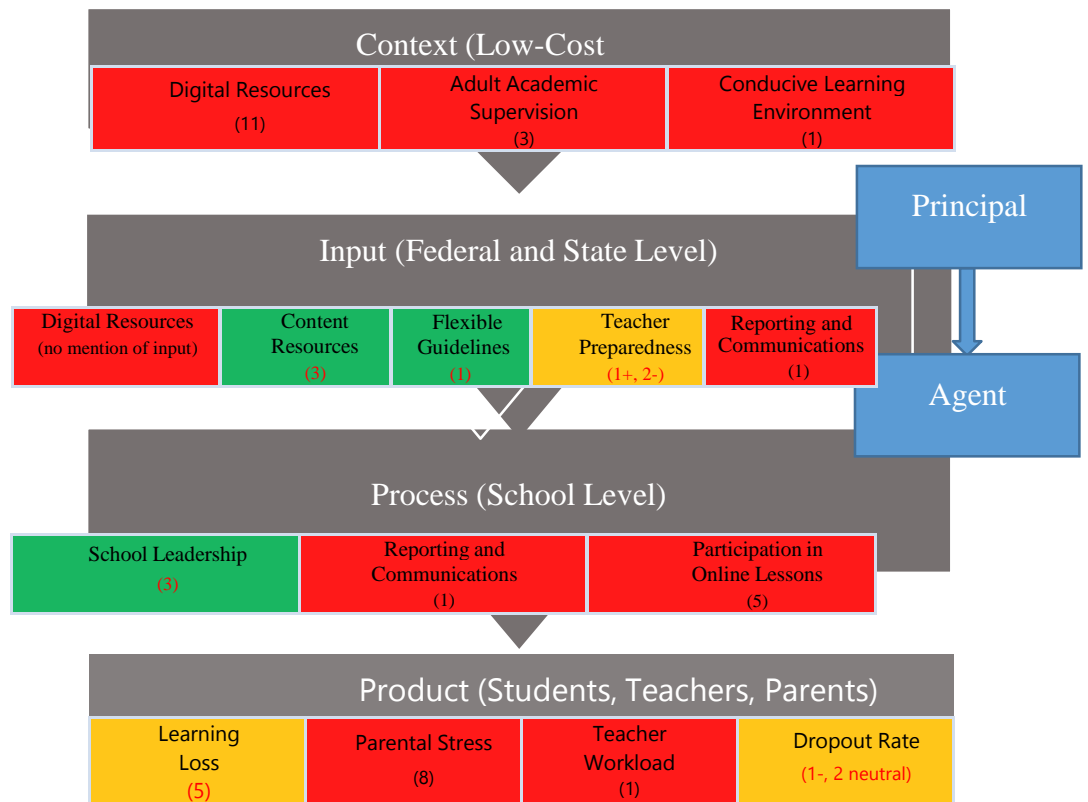


Figure 3 Coded Themes Within the CIPP Research Framework and the Principal Agent Theory

No digital resources were reported to be provided directly to low-cost flat students from the federal or state education levels either. Based on the data analysed, it will be safe to assume that the CERDIK pilot project was channelled more to other areas in the country and less to the urban poor in low-cost flats. Across all layers of interviews, all participants acknowledge that the lack of digital resources among low-cost flat students severely hinders students from participating meaningfully in emergency remote learning. Some

additional points to highlight from the data are that primary children in low-cost flats are less likely to be provided access to digital devices than secondary school children due to priority given to the older children in the family. Parents are also less likely to trust primary school students to own digital devices than secondary school students personally. Therefore, primary school students often rely on their parents' handphones for lessons. This finding proved problematic when parents returned to work while schools remained in Home Based Learning mode.

Primary children reportedly required more adult academic supervision

than secondary school children in all three areas: (i) technical support, (ii) academic support, and (iii) monitoring through lessons. At the same time, children in low-cost flats can experience the third form of supervision (although also a challenge for busy parents), and is demonstrated to be a clear education access gap for low-cost flat students. Many parents need help with manoeuvring through digital platforms. Based on the interviews, low-cost, flat parents struggle to support their children academically from Standard 2 onwards. For small spaces with households of many children, the only plausible solution is to rotate between learning and other family activities (i.e., younger children's playtime, mealtimes, elderly grandparents watching television). This provided many distractions and limited the time for a conducive learning environment for the children.

The data demonstrated heavy input from federal and state-level officers, primarily in digital training and educational content. Interestingly, most primary school students in low-cost flats relied on only two content mediums provided by the Ministry: live online classes or worksheet materials. None of the teachers or parents mentioned using TV Pendidikan (EduTV); neither did the content resource bank seem accessible to students. Most of them relied on the content filtered and selected by their teachers as a means to learn.

The Ministry of Education's approach to using all forms of media to reach students is highly applauded, as it is stated to be helpful to teachers. The flexibility in teaching and learning guidelines also allowed different school regions to cater to different student needs. The guidelines for addressing learning loss once students returned to physical school were also reported to demonstrate early signs of effective remedial learning.

The professional learning community created through the DELIMa platform and multiple webinars helped ease teacher preparation. Particularly highlighted was guidance to manoeuvre through the technical side of online teaching and learning. However, the rapid need for adoption rate meant there were still digitally illiterate teachers. There needs to be more mention of pedagogy training to build an interactive classroom online. This is a possible factor in the low engagement during online lessons under the Process section.

One of the more positive perceptions reported in the teaching and learning process is in the school leadership. All three schools interviewed demonstrated efforts in school leadership to coordinate and elicit sponsorship for digital resources for school students. Two of the three schools studied mentioned close leadership monitoring and motivation.

The administrative process of reporting and communications appears to

*Education Gap Amongst Primary School Children During
Emergency Remote Learning*

be a challenge across all levels, from the federal down to the school level. Input on guidelines may have been communicated differently across federal departments, so the carefully crafted instructions may look very different once they have reached the ground. The lack of streamlined communications and repetitive reporting also created double work and was perceived as an extra burden for the teachers. Finally, transparency in reporting provides a challenge, especially when the central theme of reporting and communications appears to be performance-based. When teachers fear that underperforming schools will be highly monitored, it may cause them to report dishonestly to avoid extra workload.

Even though home-based learning was in full swing, many parties reported low levels of participation in the learning process. Firstly, it is in terms of attendance. Students in low-cost flats record a low attendance rate. Some schools, aware of the student's device restrictions, also shortened the learning hours. These two factors result in lower contact hours between teachers and students. However, even if students had access to participate in online learning, this may not necessarily translate into reasonable levels of engagement. Teachers who struggle with technology may not conduct live lessons, and students lack focus due to the one-way teaching and learning in their online learning experience. Overall, participation in online learning was negatively reported by both parents and teachers.

From an optimistic viewpoint, emergency remote learning is not negatively reported across every domain. Nevertheless, adverse effects were seen in some specific regions. While not all schools reported an increase in dropout rate after schools reopened physically from April 2022, at least one school (School B) reported that 20 percent of the school population (about 500 students) no longer returning to school, concerning primary school is the gateway to access education and failure to complete primary level education means these students will not be able to further their education into secondary and tertiary level. Early reports from teachers and parents reassure that the education recovery programmes help to reduce learning loss experienced by students throughout emergency remote learning.

Nevertheless, there are still three main areas where the theme of learning loss can be identified: in English, Mathematics, and early stages of literacy. Due to the unpreparedness of emergency remote learning, teachers reported an increase in workload, both in the areas of preparing teaching content and reporting. Parents reported an increase in stress and worry. This can be

grouped into the stress of juggling all the tasks at hand, including supporting their children's learning at home, to worrying about their children's future if they cannot cope with their lessons.

Policy Recommendations

Due to the limited resources and immense population involved in this issue across the country, a two-pronged approach is recommended to address the issue from both short-term remedial actions and longer-term solutions.

The adverse effects of emergency remote learning should be reduced by reducing the frequency of emergency remote learning itself. This can be done through periodic physical learning days during Movement Control Order to sustain student participation in the schooling system. Flipped classrooms can be implemented whereby the main content can be provided to students asynchronously. At the same time, direct contact time with teachers can be conducted in smaller groups (maximum of five students) at different weekly appointment times. This will allow teachers to identify and address each student's gaps as the need for differentiated learning further widens in a classroom during emergency remote learning. The flipped classroom allows more flexible timing for low-cost, flat students to negotiate their learning time with their siblings, especially with limited devices and sporadic internet connectivity.

To cushion the shock of emergency remote learning, pre-pandemic e-learning days can also be conducted to train students to cope better with Home-Based Learning. This is to address the lack of adult supervision in low-cost flats, where students will be required to be technologically independent at home.

In terms of short-term education recovery, an extra workforce should be allocated to ensure these students receive the personalised supervision they need to get back on track. This can be in the form of engaging volunteers, part-time teachers, or after-school tuition hours. However, the Ministry must acknowledge the increase in workload and challenges teachers face during emergency remote learning. Therefore, extra human resource allocation must be accounted for the adult supervision efforts in education recovery, either in the form of remuneration or additional manpower.

The long-term solution is to eliminate the need for emergency remote learning. In line with developments in digital education, the Ministry of Education needs to concurrently look into developing a robust online distance learning structure for the national education system. This prevents learning

disruption, acts as alternative schooling for students, and propels the nation towards an Industrial Revolution 4.0 education. Such a system has to be developed through four areas: (1) The availability of digital devices for all students, (2) Comprehensive online content resources, (3) Maintain and further develop a learning management system, and (4) Streamlined data and communications channel for more informative decision-making and information sharing for policymakers and education implementers. As with the case study of the free Selangor Wi-Fi in the state of Selangor, other states can also provide various forms of free internet connectivity within low-cost public housing flats. Whilst the main cost of such service will be borne by the Ministry of Local Government and Housing, there can be a usage cap or simple subscription fee (e.g. RM10/month) for users in low-cost flats.

Conclusion

The period of emergency remote learning is a time of learning for all. It highlights pre-existing inequalities in education and provides an alternative mindset for rethinking how we can do things. The effects of emergency remote learning are experienced by all, but as this study demonstrates, they are even more so for the underprivileged. If policy solutions are targeted towards those who are most affected, this will benefit the rest of society.

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