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MoEYS’s Intervention During Covid-19 School Closure: Strategies and Measures, Challenges and Future Readiness

អង្គការកម្ពុជាបណ្តុះបណ្តាលអប់រំយុវជននិងកីឡា អំឡុងពេលបិទសាលា ដោយសារកូវីដ-១៩៖ យុទ្ធសាស្ត្រនិងវិធានការអប់រំ បញ្ហាប្រឈម និងការត្រៀមខ្លួនសម្រាប់អនាគត

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ABSTRACT

COVID-19 pandemics caused unprecedented impacts on Cambodia’s education, and to prevent community outbreak, Cambodian government issued sets of social distancing measures with closure of all educational institutions and others. To leverage the impact on the students’ learning, MoEYS provided numerous supporting programs. The study focused on (i) the MoEYS’s intervention, (ii) the challenged MoEYS faced and (iii) the MoEYS’s readiness for future crisis. Qualitative in-depth interview with 10 key informants were used to gather research data. The study found that to support teaching and learning during school closure, thousands of video lessons were produced. Various e-learning platforms were developed and launched for self-learning. 17% of high schools were equipped with ICT infrastructure, and 13% of teachers were trained in how to use or teach using ICT. Difficulties in arranging online working, developing online inspection tools, and educational quality became the most challenging situation for MoEYS. However, the results from intervention programs such as the newly developed videos and learning materials, the ICT

infrastructure provided to schools, training programs launched became the key assets for MoEYS's readiness to deal with similar crisis in the future. The study recommends that all developed video, measures and intervention procedures be documented, blended learning using ICT be remained, further develop e-learning materials, keep providing ICT skills development and ICT facilities, provide more supports for disadvantage schools, and promote mental health education.

KEYWORDS: Ministry of Education, Youth and Sport, COVID-19, strategy, challenge, readiness

សង្ខេប

ការរីករាលដាលនៃជំងឺកូវីដ-១៩បានធ្វើឱ្យប៉ះពាល់យ៉ាងធ្ងន់ធ្ងរដល់ការអប់រំនៅក្នុងប្រទេសកម្ពុជា ហើយក្នុងគោលបំណងការពារនូវការឆ្លងទ្រង់ទ្រាយធំក្នុងសហគមន៍ រាជរដ្ឋាភិបាលកម្ពុជាបានប្រកាសបិទនូវគ្រឹះស្ថានអប់រំទាំងអស់ ដោយការរៀននិងបង្រៀនត្រូវអនុវត្តពីចម្ងាយឬតាមអនឡាញ។ ដើម្បីកាត់បន្ថយនូវផលប៉ះពាល់ដល់ការអប់រំរបស់កុមារ ក្រសួងអប់រំ យុវជន និងកីឡាបានដាក់ចេញនូវយន្តការទ្រទ្រង់ការអប់រំជាច្រើន។ ការស្រាវជ្រាវនេះផ្តោតជាសំខាន់ទៅលើ (១) យន្តការទ្រទ្រង់ការអប់រំរបស់ក្រសួង, (២) បញ្ហាប្រឈមដែលបានជួបប្រទះ និង (៣) ការត្រៀមខ្លួនសម្រាប់អនាគតរបស់ក្រសួងអប់រំប្រសិនបើមានបញ្ហាប្រហាក់ប្រហែលគ្នាកើតឡើងនាពេលអនាគត។ វិធីស្រាវជ្រាវគុណវិស័យដោយការសម្ភាសបែបស៊ីដម្រៅជាមួយនឹងក្រុមគោលដៅសំខាន់ៗចំនួន១០នាក់ ត្រូវបានប្រើប្រាស់ដើម្បីប្រមូលទិន្នន័យសម្រាប់ការស្រាវជ្រាវ។ ការសិក្សានេះបានរកឃើញថាដើម្បីទ្រទ្រង់នូវការបង្រៀននិងរៀនក្នុងអំឡុងកូវីដ-១៩នេះ ក្រសួងអប់រំ យុវជន និងកីឡាបានផលិតនូវកម្រងវីឌីអូសិក្សារាប់ពាន់មេរៀននិងប្រធានបទ។ ក្រៅពីនេះនៅមានសម្ភារៈសិក្សាពីចម្ងាយនិងតាមអនឡាញជាច្រើនទៀតត្រូវបានផលិត និងដាក់បញ្ចូលក្នុងប្រព័ន្ធសិក្សាតាមអនឡាញនានា។ ជាមួយគ្នានេះ មានសាលារៀនចំនួន ១៧% ត្រូវបានបំពាក់នូវបរិក្ខារបច្ចេកវិទ្យាមានគ្រូបង្រៀនចំនួន ១៣% ទទួលបានការបណ្តុះបណ្តាលជំនាញបច្ចេកវិទ្យាសម្រាប់ការរៀនពីចម្ងាយនិងតាមអនឡាញ។ បញ្ហាប្រឈមដែលក្រសួងបានជួបប្រទះក្នុងអំឡុងពេលកូវីដ-១៩មានដូចជា ការពិបាកក្នុងការរៀបចំកិច្ចប្រជុំឬធ្វើការតាមអនឡាញ ការផលិតឧបករណ៍វាយតម្លៃតាមអនឡាញ និងបញ្ហាពាក់ព័ន្ធនឹងគុណភាពនៃការអប់រំ។ ទោះជាយ៉ាងណា លទ្ធផលដែលទទួលបានពីយន្តការនានាដែលក្រសួងអប់រំបានដាក់ចេញ ដូចជា កម្រងវីឌីអូមេរៀនដែលផលិតបាន គ្រូបង្រៀនដែលទទួលបានការអប់រំលើបច្ចេកវិទ្យាបង្រៀនតាមអនឡាញ ហេដ្ឋារចនាសម្ព័ន្ធបច្ចេកវិទ្យាដែលបំពាក់នៅតាមសាលារៀន និងក្លាយទៅជាចំណុចវិជ្ជមានសម្រាប់ក្រសួងអប់រំក្នុងការត្រៀមខ្លួនសម្រាប់អនាគត។ អនុសាសន៍ដែលផ្តល់ជូនចេញពីការសិក្សានេះមានដូចជា (១) ចងក្រងទុកនូវវីឌីអូមេរៀន បទពិសោធន៍ និងយុទ្ធសាស្ត្រដែលបានដាក់ចេញសម្រាប់មេរៀននាពេលអនាគត, (២) បន្តប្រើប្រាស់ការរៀននិងបង្រៀនដោយប្រើវិធីប្រមូល (blended learning), (៣) បន្តផលិតកម្រងវីឌីអូមេរៀន, បន្តបំពាក់នូវហេដ្ឋារចនាសម្ព័ន្ធបច្ចេកវិទ្យាតាមសាលារៀន, (៤) ផ្តល់ការគាំទ្រសម្រាប់សាលារៀននៅតាមតំបន់ងាយរងគ្រោះ និង (៥) បញ្ចូលនូវការអប់រំទាក់ទងនឹងសុខភាពផ្លូវចិត្តដល់គ្រូនិងសិស្ស។

ពាក្យគន្លឹះ: ក្រសួងអប់រំយុវជននិងកីឡា, កូវីដ១៩, យុទ្ធសាស្ត្រ, បញ្ហាប្រឈម, ការត្រៀមខ្លួនសម្រាប់អនាគត

1. INTRODUCTION

The World Health Organization (WHO) announced the Coronavirus Disease of 2019 as a pandemic on March 11, 2020. On March 16, 2020, in order to prevent community outbreak, the Royal Government of Cambodia (RGC) put a strong measure to close all educational institutions as well as the administration departments at national level. Closure of educational

institutions and related was believed to be the best way to secure the lives of students, teachers and education staff from COVID-19. It was the first time in education history that the global pandemic largely disrupted more than 190 countries with nearly 1.6 billion learners and 0.63 billion teachers (Nugroho et al., 2020). In Cambodia alone, it was estimated that 3.2 million students (MoEYS & ESWG, 2021) and

113,000 school personnel, of which 93,225 were teachers were affected (Chhy, 2020). The closure periods varied from one country to another. Cambodian schools were closed for more than half of the official school calendar across the academic year 2019-2020 and 2020-2021, ranking the fourth for fully prolonged closure among South-East Asian countries (ADB, 2021). It was estimated that 3.2 million Cambodian students were affected by the outbreak (MoEYS & ESWG, 2021).

Without clear information on schools reopening, the Ministry of Education Youth and Sport (MoEYS) and development partners implemented remote learning to continue teaching and learning (MoEYS & UNICEF, 2022). MoEYS had developed a response plan and financial plan which focused on safe remote teaching and learning, student and staff safety, adaptable learning environment, and resilience education system (MoEYS & ESWG, 2021). It was an immediate transformation to technological-based teaching and learning. Such rapid adoption of technology in teaching and learning created challenges for both teachers and students Thy et al. (2023) since they were not ready (Chea et al., 2022). This situation may also apply to the staff of MoEYS at the central level. A sudden switch from working from the office to home, and from traditional face-to-face to distance online was also complicated. In addition, Cambodian schools did not have much autonomy and resources to function independently but awaited guidance and resources from the central administration. In this sense, more loads were put on central staff in addition to their existing tasks. However, a lack of studies on how the central department work during the pandemic in general, in Cambodia in particular. Therefore, this study aims to explore and understand MoEYS's intervention dealing with managing and supporting teaching and learning during the outbreak.

1.1. Research Purpose

The current research focused on the MoEYS's intervention in alleviating the impact of Covid-19 on teaching and learning at upper secondary schools. With this objective, the research was guided by the following research questions:

- What were the coping strategies and measures MoEYS laid out to support the continuation of teaching and learning during school closure?

- What challenges did MoEYS face during their intervention in supporting teaching and learning during school closure?
- How ready are MoEYS to support the continuation of teaching and learning if a similar situation (pandemic) happens in the future?

2. METHODOLOGY

The current study employed qualitative methodology design in which in-depth interviews with key informants were used to gather the research data.

2.1. Sample and Data

The selection of research respondents followed convenient and purposive sampling techniques. The selection was based on the principle of being conveniently approachable and that the target informants could provide comprehensive data and information to the study. A total of 10 key informants were contacted: one female and nine males with ages between 37 and 57 years old. The participants were key staff and experts from different departments of MoEYS and relevant public educational institutions such as (i) National Institute of Education (NIE), (ii) Department of Information and Technology (DIT), (iii) Department of Examination Affairs (DEA), (iv) Education Quality Assurance Department (EQAD), and (v) General Secondary Education Department (GSED) of MoEYS. The average length of the interviews was about 45 minutes.

2.2. Research Instrument

The research data were collected through in-depth interview with key informants using a series of interview question (see Appendix). The interview questions covered different aspects of the educational situations and interventions that MoEYS issued to support the teaching and learning school closure. The interview questions also covered key aspects of challenges MoEYS faced during the implementation of educational interventions as well as MoEYS's readiness in educational supporting mechanism for future crisis. Additional questions covering insightful information were also asked depending on each informant's responses.

2.3. Data Analysis

The interviews' scripts were transcribed and analyzed using qualitative content analysis procedures with thematic categorization to capture key information to the research questions. The analysis focused on the issues covered as followed:

- the MoEYS' educational interventions or supporting mechanism which could be viewed as opportunities/advantages gained during the pandemic.
- the challenges MoEYS faced during the implementation of educational supporting programs during Covid-19.
- MoEYS' readiness in deploying educational supports if a similar crisis happens in the future.

3. RESEARCH FINDINGS

This section presented the findings from the study that involved 10 key informants from MoEYS and relevant educational institutions in Cambodia. The findings were intended to cover the following questions.

- *What were the coping strategies and measures MoEYS laid out to support the continuation of teaching and learning during school closure?*
- *What challenges did MoEYS face during their intervention in supporting teaching and learning during school closure?*
- *How ready are MoEYS to support the continuation of teaching and learning if a similar situation (pandemic) happens in the future?*

3.1. MoEYS's Strategies and Measures

Undeniably, the Covid-19 pandemics hit Cambodia's education hard and affected both teaching and learning at all school levels. During this critical period, MoEYS and relevant stakeholders issued numerous educational supporting programs to make the continuation of teaching and learning possible and to minimize learning loss among students as much as possible. In this study, it was found that MoEYS and its partners delivered the following key educational supporting programs as urgent intervention.

E-learning Materials Development

Under the supervision of the General Secondary Education Department (GSED), numerous distance

and online teaching and learning resources including online video lessons, worksheets and other important teaching and learning materials have been developed. Even started for the purpose of online teaching and learning during school closure, some material development activities are still going on, and the materials developed could be used over and over again in the future.

At the first stage, we solely developed these teaching and learning materials for grades 9 and 12 due to the requirement for national examinations. We worked with selected teachers of six subjects: Khmer language (Khmer literature), mathematics, physics, chemistry, biology and history for developing lesson videos.

[...] when the situation was getting worse and worse and all schools were closed, GSED started developing the first batch of documents which we called lesson videos and covered all grades.

[...] up to now, [time of interview] the development process was still in continuation. Another batch of materials and documents were developed which we called guiding lessons to assist the students to learn more effectively.

In addition to ready-to-use material development, GSED and relevant departments had involved in developing and distributing the materials to more easily accessible technological platforms such as MoEYS's mobile apps, websites, YouTube channel and TV broadcast etc.

[...] when the quality of our questions [worksheet] becomes better and better, we planned to develop a mobile app to make it easy to access and be aligned with digital context, digital economics and government. Between 2023 and 2025, this work will become a system that supports education and reduces using textbooks by making it so digital that students anywhere can have it. One more thing is to catch digital education for a digital economy foundation.

Approximately, 5,000 video lessons were developed and among these, 1,800 videos for the high school level and covered all subject matter were developed and distributed for use during this period.

Pedagogical and Technological Trainings

In cooperation with several units and departments, MoEYS also provided number of pedagogical and technological trainings to school teachers on how to conduct online lessons using available technology such as Messenger, Google Meet, Telegram, Google Classroom and many others. It was reported that NIE

had trained 250 to 300 academic staff, TTD had trained number of teacher trainers in the regional and provincial teacher training colleges and teacher education colleges. According to DIT, the total number of trained people reached 1,064 for physical and 12,000 for virtual training, and this figure accounted for about 13% of Cambodian school teachers. It was emphasized that most of the trained teachers are working in urban schools, where they were more likely to have access to the Internet connection, possessed electronic devices for teaching.

Equipment of ICT Materials at Schools

In addition to material development and training, MoEYS and its responsible units and department would equip several schools with ICT supported system and infrastructures. By February 2022, through DIT, 17% of high schools (525 in total) have been equipped with computer rooms together with internet connection. The number of computers ranges from 24 to 80 units depending on the school size. More than 50 (about 10%) other high schools received tablets between 10 to 20 items per school. It should be noted that the equipment of these ICT materials was not solely done during the pandemics, but rather a combined efforts before and during the school closure. The project could be viewed as an accelerating activity to existing projects aimed at enhancing the school's capacity for digital education. COVID-19 pandemics had accelerated the process for school material and infrastructure development for digital era, and its accomplishment was beyond the objectives set before the pandemics.

3.2. MoEYS's Facing Challenges

Together with the launch of educational supporting programs, MoEYS faced with challenges during this time period. The study has identified the following key challenges that MoEYS faced.

Meeting Arrangements

Meeting has been viewed has a mean to get thing done collectively; however, a sudden change from face-to-face meeting to online or virtual meeting had imposed challenges for both the organizers and participants. In this study, the challenges in meeting arrangement were due to the following reasons:

- lack of ICT skills in operating new technology, meeting platforms and electronic devices etc.
- hard to control the online discussion due to lack of interactive environment.
- possessed certain level of resistance to online meeting due to the lack of ICT skills.
- Internet connection issues which caused meeting disruption and poor communication environment.

Establishing Working Mechanism

The spread of Covid-19 had happened unpredictably, MoEYS experienced quite challenging situation in establishing working mechanism during school closure. All relevant departments were required to set up new working environment during school closure. Due to social distancing measures, online working, meeting and inspecting were mandatory, which then required each responsible department to develop proper online inspection tools and mechanism. Lack of experience, the requirement of ICT skills coupled with other constraints had imposed challenging situation for all staff.

Educational Quality Concern

Quality education is considered the primary goal of education, and with rapid transferring from traditional face-to-face and classroom instruction to distance and online learning had caused quality issues at all grades. Although MoEYS and relevant stakeholders tried every possible means to make the continuation of daily teaching and learning possible, quality wise was still a major problem which could not be ignored. Within the existing framework, resources and supporting mechanisms the problem still existed, especially at those more disadvantage areas. Through the interviews with the respondents, the study has identified several reasons which could be the factors for quality issues during school closure.

- lack of quality online teaching and learning resources. Those materials also did not cover all grades and contents in the textbooks.
- teachers and students lack good quality Internet connection for distance and online teaching and learning.
- the devices used for teaching and learning online were not available for everyone, especially among students at more disadvantage areas.

- most students used mobile phone for online learning which were not suitable for effective learning due to small screen.
- lack of technological skills in operating devices and accessing the online teaching and learning technology such as Google Classroom, Google Meet, Telegram, Messenger etc.

The following was an extracted from the interview conducted with one of the research key informants. Some participants also expressed similar messages.

During the early stage of school closures, directors and teachers found it hard to provide online teaching from home. They came to school only for cleaning and worksheets distribution purposes. During school closure, only around 40% of the students received worksheets to study at home. Also, the effect of distance teaching and learning wasn't enough if comparing to face-to-face learning.

3.3. MoEYS's Future Readiness

As mentioned in Section 3.1, with the supports from MoEYS and stakeholders, school directors, teachers and other educational staff received some trainings and opportunities to explore new ways of teaching whether distance or online instruction. In relevance to this, our respondents strongly believed that MoEYS has certain degree of readiness to cope with similar crisis if it is to happen in the future. In this study, we have several factors which could be the key indicators for MoEYS's future readiness.

Availability of E-Learning Teaching and Learning Materials and ICT Knowledge

Beside the challenges and impacts imposed by COVID-19; however, the pandemics also provided Cambodia with indispensable opportunities to learn and adapt to new ways of teaching and learning. The newly developed teaching and learning materials would become key assets for MoEYS's future readiness if school closure or online teaching and learning are required. Coupled with training programs provided during the COVID-19, school teachers, administrators are equipped with certain level of foundation knowledge, skills and experiences in online instruction and work. As elaborated by the research participants, the current Covid-19 helped push ICT for education in Cambodia to ten years in advance.

School ICT Infrastructure

School ICT infrastructures, for example, the existing Internet connection, computer labs, electricity connection to run those ICT equipment and devices are key asset to enhance MoEYS's readiness. These ICT infrastructures will strengthen the MoEYS's capacity in supporting teaching and learning if school closure or online education is required in the future crisis.

Practical Experiences and Lesson-Learnt from COVID-19

Indisputably, the COVID-19 pandemics had imposed challenges in Cambodia's education sector; however, with more than two years of experiences in working online, the crisis also provided us with some benefits. From the interviews, most of our respondents agreed that despite the challenges and impacts, MoEYS, teachers, administrators and relevant stakeholders have learnt valuable lessons and gained practical experiences in online working. These experiences will become invaluable benefits for MoEYS, teachers and those working in education if there is a similar crisis happens in the future. This can be seen as major indicator for MoEYS's readiness in the future.

4. DISCUSSION

The prevention of COVID-19 pandemics forced all educational institutions in Cambodia to close down which impact teaching and learning hard. MoEYS had putted a lot of effort to switch from face-to-face learning to distance learning; however, learning loss and quality of education were major concern. As shown in the finding section, during school closure, MoEYS and partners tried to support teaching and learning materials including worksheets and video lessons through MoEYS official media, Open Education Resources and e-learning page, e-learning application and TV broadcast. [Bhatta et al. \(2022\)](#) and [MoEYS & ESWG \(2021\)](#) also reported these MoEYS's significant interventions. It was reported that the intervention helped 70% of students continued their studies through various type of distance learning programs ([MoEYS & ESWG, 2021](#)). However, [Thy et al. \(2023\)](#) found that 46.0% of high school teachers experienced difficulties in accessing the e-learning materials from other online

resources such as MoEYS's app, YouTube, educational websites etc.

The study reported that, during this intervention, DIT and TTD had trained 13% of teachers on how to use ICT devices and G-suite. In relation to this, [Chea et al. \(2022\)](#) reported that approximately 20% of school teachers did not receive any form of training program during school closure. With supporting programs both in term of material development and training on ICT technology; however, teachers still experienced certain degree of challenges. [Chea et al. \(2022\)](#) argued that teachers experienced many challenges included how to teach using new methods, lack of ICT skills and related pedagogical skills for the new teaching norm. In relation to this, [Chea et al. \(2021\)](#) revealed that almost all the teachers participated in their study did not gain sufficient skills and knowledge for online teaching from the programs they had attended. A research study by [Thy et al. \(2023\)](#) also reported similar finding, approximately 58.% of high school teachers faced challenges in using online teaching platforms and online teaching technology, for example, Google Classroom, Google Meet, Class Dojo, Telegram, Microsoft Team etc. However, this report did not provide details whether or not those struggled in using online teaching technology received the capacity training provided by MoEYS.

Equipping ICT infrastructure and Internet connect at schools was one of the key tasks provided by MoEYS and in relation to this, [MoEYS & ESWG \(2021\)](#) reported that about 10% of High schools were equipped ICT materials cover with WIFI to use in online learning. Moreover, [Thy et al. \(2023\)](#) mentioned that 65.7% of their research participants reported that they lacked of school support with necessary devices or teaching materials for delivering teaching.

It was reported that other than the interventions provided by MoEYS to support distance and online learning, MoEYS also faced with some challenges, especially how to work online and how to ensure the quality of work. It could be evidenced that the sudden changes in working norms not only affected how the teachers teach, how the students learn but it also affected how staff at ministry level work. Lack of ICT skills, rapid adaption with online working

environment seemed to be common problem for all involved people within the educational sectors.

In term of MoEYS's future readiness, it was reported that the availability of e-materials developed during school closure, the technological platforms assisting teaching and learning, the ICT infrastructure at school, knowledge and experienced MoEYS, teachers and relevant staff gained would become key assets for MoEYS's readiness if similar situation happens in the future. However, the question remains on how are those materials should be used effectively for the purpose of teaching and learning if school closure is required. A lot of materials developed require Internet connect to access, while large number of Cambodian teachers and students faced challenges with Internet issues. In relation to this, [Heng & Sol \(2020\)](#) revealed that Cambodian educational institutions, teachers, and students were not ready for online teaching and learning due to lack of resources. As reported in [Thy et al. \(2023\)](#), 79.9% of school teachers and 70.6% of students faced challenges in their teaching and learning activities due to Internet connection.

5. CONCLUSION

5.1. Conclusion

The objectives of this study were to identify the intervention programs issued by MoEYS during COVID-19 in the support of teaching and learning, the challenges MoEYS faced and the MoEYS's readiness in dealing similar situation in the future. It was evidenced from the study that thousands of video lessons and e-learning resources were developed, distributed and put for use in MoEYS's e-learning platforms such as YouTube, websites and mobile applications. Approximately 17% of schools were equipped with computers and internet network connections and necessary ICT infrastructure. 13% of teachers received capacity trainings in ICT, especially on how to use or teach online. In addition to these intervention programs, MoEYS and partners also experienced several challenges in online working, meeting, developing online monitoring tools and educational quality. The new-developed distance and online learning materials, knowledge gained from training programs, experiences during COVID-19 had been viewed as key assets for MoEYS's future readiness.

5.2. Recommendations

Based on the study from various countries, the literature, insights from key informants, and the lessons learned from Cambodia's own experiences, as presented in the findings section above, the authors make the following recommendations. These recommendations aim to address the challenges identified in the study and enhance the preparedness of MoEYS and its stakeholders for future crises that may disrupt traditional education systems.

MoEYS

- *Sustain E-Learning Initiatives:* Continue the development and enhancement of e-learning materials, ensuring they cover all grades and subjects. Regularly update and improve the quality of online resources to meet the educational needs of students.

- *Expand ICT Infrastructure:* Invest in expanding ICT infrastructure at schools, especially in rural and disadvantaged areas. Ensure that schools have reliable internet connections, computer labs, and necessary devices to facilitate effective online learning.

Educators and School Administrators

- *Continuous Professional Development:* Engage in ongoing pedagogical and technological training to enhance the capacity of teachers to conduct online lessons effectively. Focus on addressing challenges such as lack of ICT skills and limited access to online teaching platforms.

- *Adaptation of Teaching Methods:* Encourage teachers to adapt their teaching methods for online and distance learning. Foster creativity in delivering lessons through digital platforms and address the specific needs of students using mobile phones for online learning.

Students

- *Digital Literacy Training:* Provide students with training on digital literacy and the effective use of online learning platforms. Ensure that students, especially in rural areas, have access to devices suitable for online learning.

- *Enhance Engagement:* Develop interactive and engaging online content to maintain student interest

and participation. Address challenges related to the use of small-screen devices for effective learning.

DIT and TTD

- *Expand Teacher Training Programs:* Collaborate with each other to expand training programs for teachers on ICT devices and online teaching tools. Ensure that training programs are accessible to a larger percentage of teachers, including those in rural areas.

GSED

- *Curriculum Development:* Continue the development of digital teaching materials, covering a wide range of subjects and grades. Focus on creating materials that align with the digital context and can be easily accessed through various platforms, including mobile apps, websites, and TV broadcasts.

Policy Makers and Government

- *Long-term Planning:* Develop long-term plans for the integration of technology in education. Consider digital infrastructure as a critical component of the education system and allocate resources for its continuous improvement.

- *Equity in Access:* Implement policies that ensure equitable access to digital resources, considering the socio-economic disparities among students. Address issues related to internet connectivity and device accessibility.

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APPENDIX

No.	Interview Questions	Addition
1	<p>ក្នុងកំឡុងពេលបិទសាលារៀន ទាក់ទងនឹងការបង្រៀន និងរៀននៅមធ្យមសិក្សា តើនាយកដ្ឋានបានធ្វើកិច្ចការអ្វីខ្លះ? ជួបបញ្ហាប្រឈម ឬផលវិបាកអ្វីខ្លះ?</p> <p>During the school closure, regarding teaching and learning support, what did the department do? Did the department face any challenges or difficulties?</p>	
2	<p>តើដំណើរការនៃប្រព័ន្ធបង្រៀន និងរៀន online ឬពីចម្ងាយមានអ្វីខ្លះ? តើវាមានយន្តការ ឬដំណើរការយ៉ាងម៉េចដែរ?</p> <p>What were the online/distance teaching and learning modalities? How did they work or run?</p>	
3	<p>ដោយសារសិស្សត្រូវបានតម្រូវឱ្យរៀនពីចម្ងាយ ជាគោលការណ៍ តើការប្រឡងត្រូវបានធ្វើឡើងយ៉ាងដូចម្តេចខ្លះ? មានការរៀបចំប្រព័ន្ធប្រឡង online ដែរឬទេ? បើមាន តើវាមានយន្តការដូចម្តេចដែរ? តើប្រព័ន្ធនេះមានដំណើរការយ៉ាងម៉េចដែរ? តើនាយកដ្ឋានបានជួបបញ្ហាប្រឈម ឬជាផលវិបាកអ្វីខ្លះ?</p> <p>Did the department involve in online testing/exam? How did it work? Did the department face any challenges or difficulties?</p>	
4	<p>ដោយសារសិស្សត្រូវបានតម្រូវឱ្យរៀនពីចម្ងាយ ជាគោលការណ៍ តើការប្រឡងត្រូវបានធ្វើឡើងយ៉ាងដូចម្តេចខ្លះ? មានការរៀបចំប្រព័ន្ធប្រឡង online ដែរឬទេ? បើមាន តើវាមានយន្តការដូចម្តេចដែរ? តើប្រព័ន្ធនេះមានដំណើរការយ៉ាងម៉េចដែរ? តើនាយកដ្ឋានបានជួបបញ្ហាប្រឈម ឬជាផលវិបាកអ្វីខ្លះ?</p> <p>How may the department evaluate teaching and learning (or test and exam) during the school closure?</p>	
5	<p>នៅពេលដែលសិស្សត្រឡប់ចូលរៀនក្នុងសាលារៀន តើប្រព័ន្ធនេះបានក្លាយជាយ៉ាងណាហើយ?</p> <p>When school re-open, how are these systems?</p>	
6	<p>ឆ្លងកាត់វិបត្តិលើកនេះ តើនាយកដ្ឋានបានរៀនសូត្រអ្វីខ្លះ?</p> <p>What are lessons learnt that the department learnt from working amid Covid-19 outbreak?</p>	
7	<p>ដើម្បីជាការបង្ការ ឬក៏ត្រៀមខ្លួនសម្រាប់វិបត្តិស្រដៀងគ្នានៅថ្ងៃអនាគត តើនាយកដ្ឋានមានគោលនយោបាយ ឬទស្សនាដូចម្តេចដែរ?</p> <p>For future prevention to the similar issue, what do the department do or prepare?</p>	
8	<p>តើនាយកដ្ឋានបានប្រមើលមើលឃើញមានកាលានុវត្តភាពអ្វីខ្លះដែរ? តើនាយកដ្ឋានចាប់យកកាលានុវត្តភាពយ៉ាងដូចម្តេចដែរ?</p> <p>Do the department find any opportunities from this issue?</p>	
9	<p>ជាការជួយគាំទ្រដល់ការបង្រៀន និងរៀនតាមសាលា តើនាយកដ្ឋានមានផែនការ ឬក៏ជាទស្សនាដូចម្តេចដែរ?</p> <p>To support teaching and learning at the school level, what is the vision of the department?</p>	