From Disruption to Recovery: Strategic Education Policy for Post-Pandemic Brunei

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ABSTRACT

The COVID-19 pandemic has significantly disrupted education systems worldwide, including in Brunei Darussalam, where extended school closures have adversely impacted student learning, particularly among those from low socioeconomic backgrounds. In response, the Ministry of Education prioritized the development of a sustainable and equitable learning recovery strategy. Guided by an integrated theoretical framework combining Educational Resilience Theory and Systems Theory in Education, this study investigates the extent of pandemic-induced learning loss and identifies strategic policy interventions. A qualitative approach was employed, incorporating document analysis, secondary survey data from 36,740 students across 147 public schools, and structured school-level observations. Analysis of the data identified two key contributing factors to the learning gap: human-related and organizational challenges. The study proposes four policy alternatives and recommends the integration of the Student Resource Management System (SRMS) and the Learning Accelerated Recovery Program (LARP) as strategic responses to mitigate learning disparities. This paper advocates for a resilient, inclusive, and future-ready education system aligned with Brunei's long-term national goals.

Keywords: Learning Loss, Learning Recovery, Brunei, COVID-19, Education Policy

INTRODUCTION

The aftermath of COVID-19 has shown that the rise of globalization and the interconnection of people's lives has presented a new set of risks as individuals have become more vulnerable to wide-ranging uncertainty. COVID-19 has disrupted societies' lives regardless of age, gender, health, income, educational level, and nationality, which immediately became a global crisis. These factors have significantly affected advantaged and disadvantaged learner groups, causing them to experience interruptions due to lengthening school closures. According to the World Bank, before the pre-COVID-19 pandemic, only 10 per cent of students in low-income households could read a simple story by the age of ten compared to 90 per cent of students from high-income countries (World Bank, 2019). The pandemic had already accelerated a widening of the learning gaps, even exacerbated by the temporary shutting down of schools. According to related studies, school closures are continually associated with signs of "learning losses" (Andrabi et al., 2021; Angrist et al., 2020; Donnelly & Patrinos, 2022; Maldonado & De Witte, 2022; Moscoviz & Evans, 2022; Jaume & Willén, 2019; Page et al., 2021; Slade et al., 2017; Shahrill et al., 2024b).

In Brunei, the COVID-19 pandemic has tremendously affected all public and private schools through mandatory closure for three consecutive periods. As a result, it instigated continuing significant disruptions, such as learning deficits among many students from the initial start of the pandemic in March 2020. Since the first known cases of COVID-19 (Hamid & Karri, 2021; Hamid et al., 2022; Wong et al., 2020a, 2020b), teaching and learning in Brunei began with schools providing a Home Learning Pack (HLP) to pupils and has gradually shifted online (Ebil & Shahrill, 2024; Ministry of Education, 2020; Omar Ali & Abdullah, 2024; Shahrill et al., 2021a, 2024b; Zakir, 2024). However, some of these children lack learning devices, struggle to participate, and experience

other difficulties that lead to the anticipation of enduring learning loss. Despite the government's efforts to provide learning devices for underprivileged students through device donation drives, many children still have inadequate access to online learning. Subsequently, some students have insistently experienced difficulties participating in home education.

The Brunei Compulsory Act 2007 mandates that all residents of Brunei Darussalam, both citizens and non-citizens born after 2002, must attend formal schooling from the age of six. Despite this statutory obligation, recent data indicate a concerning decline in physical student attendance following the reopening of schools in May 2022. National figures show that only 77.8% of students were physically present in public schools. A significant proportion of these absentees belong to underprivileged or socioeconomically disadvantaged groups, often referred to as “off the grid” students. This term describes learners who were unable to engage in Home-Based Learning (HBL) fully, showed irregular online participation, inconsistently submitted Home Learning Packages (HLP), and remained chronically absent from in-person sessions. If this pattern continues, it risks widening educational disparities across all levels of schooling – from kindergarten to tertiary education.

The COVID-19 pandemic exposed and exacerbated these educational vulnerabilities. The first wave of infections in 2020 led the Brunei government to impose partial emergency lockdowns, resulting in the initial closure of schools (Ebil & Shahrill, 2024; Hamid & Karri, 2021; Hamid et al., 2022; Omar Ali & Abdullah, 2024; Shahrill et al., 2021a, 2024a, 2024b; Zakir, 2024). A second wave on August 7, 2021, forced another temporary shutdown and the adoption of online learning as the primary mode of instruction. Although schools reopened on May 14, 2022, under stringent standard operating procedures (SOPs), lingering attendance issues remain. Between 2020 and 2022, Brunei experienced 185 days of school closures (32 days in 2020, 81 in 2021, and 72 in 2022), which was equivalent to 25.4 weeks of disrupted learning. During this period, approximately 605 school days were severely impacted due to absenteeism and disorganization brought about by the pandemic (Ministry of Education, 2022). These extensive disruptions necessitate urgent and comprehensive responses to strengthen the resilience and inclusivity of Brunei’s education system.

To address these challenges comprehensively, this study is guided by an integrated theoretical framework combining Educational Resilience Theory (Masten, 2021; Ungar, 2021) and Systems Theory in Education (Harris, 2020; Fullan, 2021). Educational Resilience Theory emphasizes the role of protective factors and strategic interventions in enabling educational systems to recover and thrive following disruptions. Systems Theory in Education complements this by highlighting education as an interconnected network, wherein effective recovery strategies must target multiple systemic levels including institutional management, resource allocation, teacher capacity building, and community involvement.

Thus, the main objective of this paper is to conceptualize a learning recovery framework essential to mitigate the severity and long-term consequences on students' learning, social and future economic well-being in Brunei. Specifically, the study addresses the following research question, “What are the key human-related and organizational challenges contributing to pandemic-related learning loss among students in Brunei, and how can strategic policy interventions effectively address these challenges?”. Subsequently, this paper proposes a learning recovery approach to ensure Brunei's education system remains resilient, adaptable, and responsive to future crises.

METHOD

This study employed a qualitative document analysis, incorporating secondary survey and structured observations, with all data obtained from the Ministry of Education (MOE). The secondary dataset was drawn from the national Student Learning Survey (SLS), which was administered between March and May 2022. The SLS captured responses from 36,740 students in Year 1 (ages 6-7) to Year 10 (ages 15-16), across 147 public schools, comprising 116 primary and 31 secondary schools in Brunei Darussalam. These data was analysed to identify patterns of learning loss and to assess the extent of academic disruption caused by the COVID-19 pandemic.

In addition, document analysis involved reviewing official reports, policy documents, and internal guidelines released during the pandemic period to understand institutional responses. Structured observations were

conducted to document school-level practices and instructional adjustments made in response to prolonged school closures. Triangulating these data sources enabled a comprehensive understanding of the pandemic's impact on student learning and attendance.

Notably, this study received ethical approval from the Ministry of Education, Brunei Darussalam. Ethical clearance ensured that all procedures involving data access and analysis compiled with both institutional and national research guidelines. Furthermore, this study was designed to inform the development of evidence-based policy recommendations. It does not evaluate the direct implementation or long-term outcomes of any proposed interventions. Rather, the findings aim to serve as a foundation for guiding future decision-making processes focused on achieving effective and equitable learning recovery within Brunei's education system.

RESULTS

Maintaining the Status Quo

This study estimates that students in Brunei, from Year 1 (ages 6-7) to Year 10 (ages 15-16), have experienced learning loss of up to 0.45 standard deviations (SDs), a figure significantly higher than the 0.16 SDs average observed in advanced economies (World Bank, 2020). Such a substantial decline in learning outcomes is projected to reduce individual annual earnings by approximately USD 872, amounting to a lifetime income loss of around USD 16,000 per student (Azevado et al., 2021). These projections challenge Brunei's national objectives of reducing educational inequality and mitigating the long-term socio-economic effects of the pandemic.

The findings also reveal a strong correlation between COVID-19-related school closures and declining educational attainment, evidenced by increased dropout rates and lower average academic performance. Consequently, maintaining the status quo by policymakers without intervention exacerbates existing disparities and hinder future employment prospects for affected students. As highlighted by Currie and Thomas (2001), even a 0.20 SDs decline in test scores can reduce the likelihood of future employment by 0.86%, reinforcing the urgent need for strategic policy action to prevent lasting educational and economic terms.

Strategic Investment in a School Resource Management System (SRMS)

While student engagement within face-to-face compulsory education settings is relatively well understood, the same cannot be confidently asserted for online or remote learning environments. In response to the challenges posed by remote instruction, many higher education institutions have adopted a Student Resource Management System (SRMS) to enhance student engagement and academic monitoring (Goh & Paryono, 2024; Idris et al., 2021; Jamil et al., 2022; Johari et al., 2024; Shahrill et al., 2021a, 2021b, 2022, 2024a, 2024b; Shahrill & Hardaker, 2022; Shahrill & Keasberry, 2024; Tuah & Naing, 2020). Implementing a similar approach within Brunei's school system presents an opportunity to improve operational efficiency and responsiveness across all educational levels.

A SRMS functions as a centralized platform for storing, managing, and analyzing student data, including attendance, learning activities, health records, and academic performance, thus supporting real-time decision-making and institutional efficiency. By automating administrative tasks such as data analysis, timetable scheduling, and report generation, SRMS significantly reduces the workload on teaching staff, enabling them to redirect their focus toward instructional planning and improving the quality of pedagogy. Moreover, SRMS enhances school-wide communication through automated SMS updates between parents and educators, streamlines enrolment procedures, and facilitates access to educational resources.

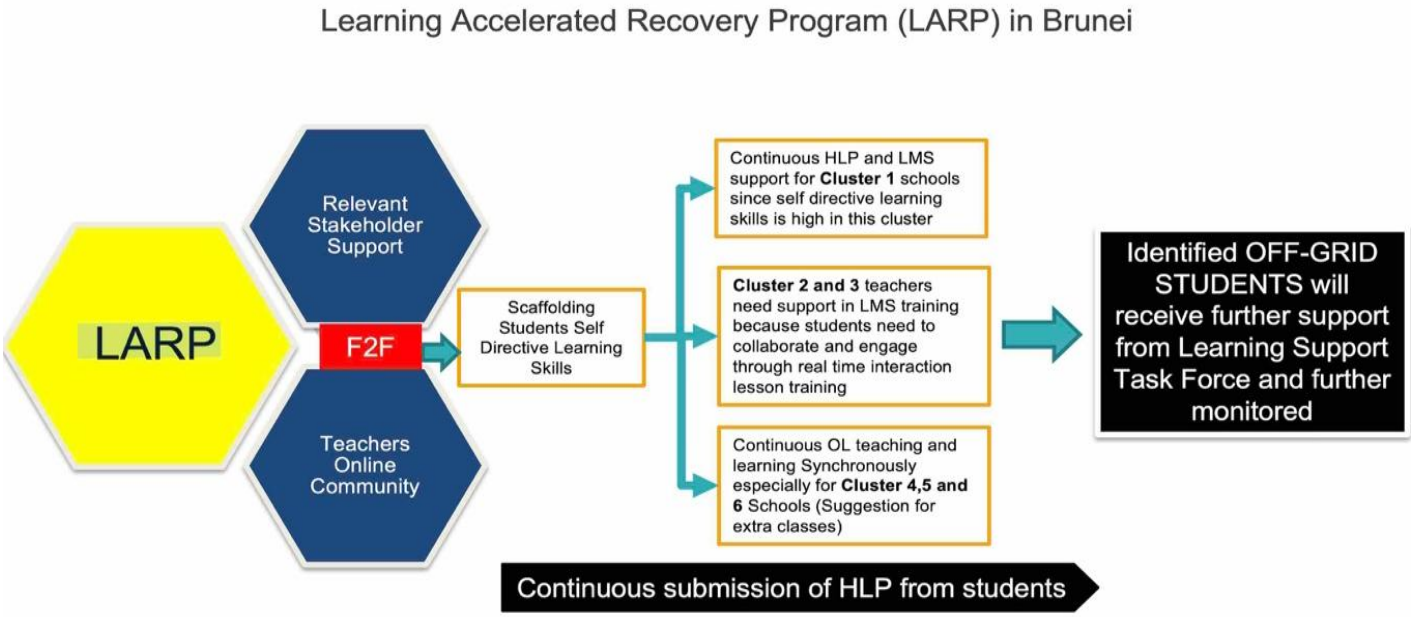
These combined features collectively contribute to the improved effectiveness and adaptability of the education system. However, the implementation of SRMS requires careful planning and resource allocation. A detailed cost-benefit analysis is essential to determine the financial sustainability and long-term impact of adopting such as system across Brunei's education sector. Strategic investment in SRMS infrastructure and capacity-building will, therefore, be critical for ensuring a resilient, data-informed, and equitable education system aligned with Brunei's Vison 2035.

Learning Accelerated Recovery Program (LARP)

In response to the initial outbreak of COVID-19 in Brunei, the Ministry of Education (MOE) swiftly implemented its Business Continuity Plan (BCP), which included immediate school closures and the early commencement of school holidays to limit the spread of the virus among students (Ministry of Education, 2020). As part of its contingency strategy, the MOE introduced the Home Learning Pack (HLP) system, enabling students to continue learning through printed materials during school closure (Shahrill et al., 2021a, 2024b; Omar Ali & Abdullah, 2024). By June 2020, following a decline in infections, schools began reopening in phases, allowing for the gradual return of face-to-face instruction. After an extended period of 457 days without reported COVID-19 cases, all public and private schools resumed operations, marking the emergence of a blended teaching and learning model (Ibrahim et al., 2022; Johari et al., 2024). Drawing from success factors and feedback gathered from pilot schools across Brunei's four districts, the MOE developed a more structured approach to blended learning.

However, during the second wave of the pandemic, the reimplementation of school closures necessitated a rapid transition to fully online instruction. Two key strategies emerged during this phase: (1) expanding learning opportunities beyond traditional virtual classrooms, and (2) prioritizing curriculum recovery to address learning loss. This paper proposed a Learning Accelerated Recovery Program (LARP) to close persistent learning gaps to enhance system preparedness for future crisis.

Figure 1: Proposed Learning Accelerated Recovery Program (LARP) in Brunei



As illustrated in Figure 1, the proposed LARP would be designed to support post-COVID-19 learning recovery in Brunei, with a particular focus on students classified as "off-grid", those demonstrating minimal or no participation in learning activities. The LARP framework would be underpinned by two main components: relevant stakeholder support and a professional online teacher community, reinforced by face-to-face (F2F) interaction to scaffold students' self-directing learning skills. The model proposes a differentiated support approach based on the varying degrees of student autonomy and teacher readiness across schools. In contexts where students demonstrate strong self-directed learning skills, the continued provision of Home Learning Packs (HLP) and access to Learning Management Systems (LMS) would be maintained with minimal intervention. In contrast, schools with moderate needs would require targeted LMS training for teachers to enhance student engagement through real-time, interactive lesson delivery. Meanwhile, schools facing more significant instructional challenges would be encouraged to implement ongoing synchronous online teaching, supplemented by additional classes to address substantial learning gaps. This tiered approach would recognize varying school capacities and tailor learning recovery efforts accordingly.

Students identified as "off-grid" would receive targeted support and be closely monitored by a Learning Support Task Force to ensure that no student is left behind. Ongoing submission of HLPs would serve as a mechanism to monitor learning participation and progress. Through the integration of digital tools, stakeholder collaboration, and teacher capacity-building, LARP would aim to foster self-regulated learning, promote inclusive access to quality education, and strengthen the resilience of Brunei's education system. This policy framework would offer a proactive model for ensuring educational continuity in the face of future disruptions, aligning with national goals for inclusive education.

Postponing One Academic Year for Targeted Grade Levels to Mitigate Learning Hysteresis

The concept of learning hysteresis-where temporary disruptions result in long-term educational setbacks-has emerged as a critical concern in the global discourse on post-pandemic education recovery (Kuhfeld et al., 2020; Tomasik et al., 2020; Pier et al., 2021). This phenomenon is particularly pronounced among students from socioeconomically disadvantaged backgrounds, who face more significant risks of academic disengagement and potential dropout due to limited access to digital learning resources and reduced parental support (Azevedo et al., 2021; Gouëdard et al., 2020). In this context, the proposal to delay one academic year for specific grade levels has been explored as a targeted intervention to mitigate the long-term impact of pandemic-induced learning loss. Research indicates that extending instructional time, such as a six-week or longer delay, may help students recover missed curricular content and improve learning outcomes (Kaffenberger, 2021). However, this policy option presents significant challenges. It may be met with resistance from teachers already experiencing fatigue, and it raises concerns about disrupting the continuity of student learning trajectories. Moreover, any postponement of formal schooling may be perceived as regressive, particularly in systems striving for uninterrupted educational progression. Thus, while the proposal may offer remedial benefits, its feasibility and acceptability require careful deliberation within the broader framework of equitable and sustainable education recovery.

IMPLICATIONS, CONCLUSION & RECOMMENDATIONS

Implications and Conclusion

The findings of this study reveal critical implications for the future direction of Brunei's education system. They underscore the urgent need for a coherent, data-informed policy framework to guide both recovery from the COVID-19 pandemic and preparation for future systemic disruptions. A central recommendation is the strategic integration of the Student Resource Management System (SRMS) and the Learning Accelerated Recovery Program (LARP) into a single, coordinated policy mechanism. This unified approach would strengthen institutional capacity for real-time monitoring, streamline instructional planning, and reduce disparities in educational outcomes.

The long-term economic and social consequences of pandemic-related learning loss are also highlighted. These include projected reductions in lifetime earnings and broader implications for national productivity. Addressing these issues demands a sustained, evidence-based policy response that includes longitudinal evaluation of learning outcomes. Particular attention must be directed toward students who remain educationally disadvantaged due to digital exclusion, inconsistent home support, or socioeconomic barriers. Equitable access to quality education is essential for achieving inclusive national development.

Additionally, the findings emphasize the opportunity to reimagine Brunei's education landscape through a future-focused lens. Aligning learning recovery with the goals of Vision 2035 requires institutionalizing resilience in education planning and policy. By framing education as a driver of innovation, economic resilience, and societal well-being, the nation can transform this crisis into a platform for transformational educational reform.

Recommendations

Building on the above implications, several targeted and actionable recommendations are proposed. Firstly, a national policy roadmap should be developed to consolidate current recovery efforts into a single, cohesive

strategy. This roadmap should go beyond existing proposals such as the SRMS and LARP and instead provide clear operational plans, timelines, and evaluation mechanisms. It should prioritize inclusive stakeholder engagement and ensure alignment with broader national development frameworks.

Secondly, while digital access challenges have been identified as a systemic weakness, recommendations should focus on ensuring continuity of access for all students. This includes maintaining and upgrading infrastructure, extending device loan schemes, and investing in school-based digital hubs that allow students to access resources outside standard instructional hours.

Thirdly, differentiated support structures should be implemented to address specific learner needs. These could include in-school remediation programs, after-school tutoring initiatives, and targeted psychosocial support services. A tiered approach would allow for scalability and flexibility across different school contexts.

Fourthly, greater investment in teacher professional development is essential to equip educators with the pedagogical tools required for adaptive, blended, and student-centered learning. Continuous training in formative assessment, digital pedagogy, and inclusive teaching practices should be institutionalized as part of recovery planning.

Finally, governance and leadership structures must be strengthened to ensure coordinated policy implementation. This includes establishing cross-sectoral working groups, clear accountability frameworks, and robust data system for monitoring progress. These systemic enablers are essential to sustain long-term transformation and ensure Brunei's education system is future-ready.

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