Analysis of the home-based online teaching and learning policy during the COVID-19 second wave in Brunei: a joint parent/teacher perception

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Abstract
The COVID-19 pandemic has disrupted the traditional face-to-face forms of educational instruction and has led to increased involvement in online learning. Consequently, online learning has gained popularity and has become the norm worldwide today, because it offers a safe learning environment as well as convenience and flexibility. During the pandemic, school campuses in Brunei were closed, classes were conducted online, and parents/guardians were expected to cooperate and assist their children with home-based online learning. However, online teaching posed a different set of challenges for teachers and students, which warrant research and policy attention at the national level. This study provided a review of the literature on the policies and best practices for online teaching and learning and formulated three key objectives. The first was to identify the policy initiatives and guidelines introduced by the government of Brunei to facilitate and ensure the effectiveness of online teaching and e-learning. The second referred to obtaining the perceptions of teachers and parents on three specific dimensions, namely, the implementation of blended learning, the use of online pedagogy, and enhancement of the e-learning experiences of students. The last objective was to identify the challenges associated with these dimensions and to propose actions and policy recommendations for improvement. This study employed document analysis, interview, and data collected from public social media. The implementation of online teaching and e-learning in Brunei was met with many challenges due to the poor network infrastructure and weak knowledge and content development of ICT. Thus, this study serves as a basis for improving innovation and governance in education, which focuses not only on the enhancement of academic performance but also on the digital divide. The paper was first presented at the 21st International Conference on Education Research (ICER) at the Seoul National University, Republic of Korea on October 21, 2021, by the first author. This research is part of the research project entitled: Pandemic Policies and Governance in Small States in the Southeast Asian Region.

Keywords Online learning policy · COVID-19 · Education · Education policy · Innovations · Work from home governance · Education governance

Introduction
The COVID-19 pandemic disrupted face-to-face learning due to worldwide school closure. At some point during the pandemic, the closure led to the proliferation of online and home-based learning as a new mode for teaching and learning. Nepal and Uganda held the longest record for school closure at 64 weeks, and South Korea closed schools for 60 weeks. Alternatively, Iceland implemented the shortest duration of school closure among developed nations, whereas Belarus, Burundi, Nauru, Tajikistan, and Turkmenistan opted to keep schools open (UNESCO, 2020). Although lockdowns and school closures were the common approaches used to curb the spread of COVID-19, certain countries opted for less stringent measures whereby in-person schooling remained available for emergency childcare, vulnerable children, and children of essential workers. Hence, policy and communication choices made by national leaders exerted an impact on the effectiveness of responses to the pandemic.

Brunei was no exception. Between March 30 and May 30, 2020, schools in Brunei were conducted online within
the home. Schools were partially reopened on June 2, 2020 and fully reopened on July 20, 2020, after the cessation of community transmission. However, on August 7, 2021, a second wave of local transmission occurred. The Brunei Ministry of Education (hereby MOE) took swift action to announce for schools to resume online teaching on Monday, August 8, 2021. Whether or not online learning should be viewed was subject to the outcome of uncertain future events, and online learning as an advancement that intensely shaped the landscape of education during COVID-19 was also acknowledged. On August 10, the number of local cases skyrocketed, which forced the MOE to shift the term school holiday from September to August 12–17, 2021. Although this decision reduced the pressure on parents after the lockdown, the majority continued to struggle to balance among work, parenting, and home schooling.

In a UNESCO report, Chek Bujang (2020) extensively writes on response policies in relation to education in Brunei and lessons drawn from the policy implementation. However, the report is purely a document analysis, which excludes the perceptions of relevant stakeholders in Brunei society on the implementation of government policies, thus, creating a research gap for this paper to address. Moreover, the report was written after June 2, 2020, or 15 months prior to the second wave of COVID-19. Stakeholder perceptions are important, because their experiences during the shifts in education policy due to COVID-19 are critical for preparing Brunei in coping with similar serious national crises in future (Luik & Lepp, 2021). Obtaining inputs, particularly from local educational stakeholders, can help the government ensure that the policies implemented fit the local context.

Many researchers broadly conducted studies on online learning in Brunei during the first wave of COVID-19 in 2020 (Abdullah et al., 2021; Idris et al., 2021; Noorashid, 2020; Noorashid et al., 2021; Qazi et al., 2020; Shahrill et al., 2021a), which cover the challenges, opportunities, and perceptions associated with teaching and learning. However, these studies mainly highlighted the context of higher education institutions during the first wave of COVID-19. For example, Noorashid et al. (2020) and Shahrill et al. (2021b) discussed the pressure faced by academia due to the implementation of online learning policies. Qazi et al. (2020) assessed satisfaction levels with online learning based on the perceptions of university students in Brunei and Pakistan. The results demonstrated that university students in Brunei were more satisfied with online learning compared to those in Pakistan, which is partially attributable to the high Internet accessibility in Brunei (Anshari et al., 2016). Idris et al. (2021) further examined the positive and negative experiences with teaching and learning and the physical and mental health of undergraduate students and academic staff of University Brunei Darussalam during the COVID-19 pandemic. The authors issued a call for new pedagogies for online teaching and the need to promote the enhancement of and adaptation to digital technology in education.

Although the aforementioned studies on COVID-19 and education in Brunei significantly contributed to the literature, they generally focused on understanding the rationale of online education and the future of pedagogy development in the country. Thus, comparatively less research was conducted on the effectivity of the implementation of online teaching and learning policy in Brunei. One method for assessing this aspect is feedback from stakeholders. In this context, this current study aims to address the following research question.

What impact does Brunei’s online teaching and learning policy have on teachers and parents during the time of COVID-19?

Several studies examined the perceptions of students and teachers about online teaching and learning in global higher education institutions, including those in Brunei, but rarely in the context of primary/secondary education. Studies that focused on primary/secondary education primarily investigated the impact of online teaching and learning policy largely from perspective of teachers. Parental involvement is an area where research with the potential to exert a significant impact on policy and practice is needed. Hence, the current study is among the first to investigate the joint perceptions of teachers and parents in primary and secondary education in Brunei in relation to online teaching and learning policy in response to the COVID-19 pandemic. This study presents the following main objectives:

- to identify the policy initiatives related to online teaching and learning (activities, programs, or guidelines) introduced by government of Brunei in national education;
- to obtain the joint perceptions of teachers and parents on the online teaching and learning policy in Brunei specifically on the implementation of blended learning, the use of online pedagogy, and enhancing the e-learning experiences of students; and
- to identify the challenges associated to these areas and propose recommendations for improvement.

Literature review

This section provides an overview of the literature pertinent to the following themes: online and blended learning and teacher and parental experiences.
Online and blended learning

Online learning is a form of education, where students acquire knowledge in a fully virtual (Internet-based) learning environment (Benson, 2002). It connects students from diverse backgrounds and geographical areas to learn in a flexible manner (Hiltz & Turoff, 2005). Online learning can be conducted in two forms, namely, asynchronous (students are online at different times and utilize discussion threads and emails to complete coursework) and synchronous (students are online at the same time). Each form supports different purposes (Hrastinski, 2008). Alternatively, blended learning combines traditional (classroom) and online learning environments. Scholars argue blended learning have adopted the values of traditional classes, which improved the effectiveness of meaningful learning experience (Garrison & Kanuka, 2004). The study will review the adoption of these two forms of learning in education according to countries.

China adopted online learning to mitigate disruptions caused by the COVID-19 pandemic toward schooling (Xue et al., 2021). The majority of schools were closed during the height of the pandemic and were replaced with home-based online learning. Interestingly, in contrast to schools in many parts of the world, teachers in China were not required to prepare materials, because the government provided these materials through local government institutions and they were aired on public television channels free of charge. Prior to the reopening of schools, the Ministry of Education in China produced a compilation of certain practices and procedures, such as basic control of the pandemic, basic prevention and control measures in schools, and effective control of large school transmission clusters. Teachers maintained well-being through face-to-face or physical meetings in small groups that observed COVID-19 safety protocols, increased online training for teachers and the public, recommendations to teachers, and engagement of parents prior to school reopening. Moreover, the government paid attention to the well-being of students. Although Xue et al. concluded that the education policy in China for online education during the pandemic produced positive results, a detailed discussion was lacking, and no evidence existed of feedback from and the engagement of stakeholders in the policy development process.

A similar scenario was observed in Nepal, where the online learning policy was enacted without consultation with grassroots stakeholders (Shreshta & Gnawali, 2021). Online learning continued to take place inside the homes of schoolchildren with its set of challenges. For example, Shresta and Gnawali (2021) criticized the educational policymakers in Nepal for the lack of dialog with local education stakeholders and insufficient clarity and infrastructure in terms of funding, time frames, and implementation details. In particular, information was lacking on the influence of online schooling on teachers, parents, and the learning experiences of students during COVID-19. Grassroots stakeholders were experienced or lacked confidence to actively engage in online teaching and learning, and mechanisms to provide a collection of volume and capacity-related teaching resources to schools and parents were inadequate.

Kelly et al. (2021) conducted a comparative study on the responses of England, Germany, and Italy to COVID-19 through online education policies. The authors examined the support provided by the education policies of these countries to vulnerable children and children with special needs to navigate the digital divide, inform the decision making process on school reopening, support national preparation, and guide the implementation process. The authors examined these aspects through the lens of Bordieu’s theory of the state, but a study in which critical analyses applied to each of the education policies is lacking.

Although the concern about the impact of online teaching and learning is growing, the Malaysian government factored in on technological advancement, group work, education preparedness, Internet access, and the student assessment process to improve its education system (Sufian et al., 2020). This need for improvement called for collaboration among stakeholders to give support, increase engagement and commitment, and provide financial aid in improving educational access, opportunities, and experiences. In summary, Sufian et al. (2020) mainly focused on external factors. In addition, equal attention must be given to internal parameters, such as the development of appropriate learning designs to fit different circumstances/purposes, and demand-side perspectives that induce quality education and stimulate a supportive school climate and learning environment.

In knowledge-based economies, such as Singapore that highly emphasizes education, distance learning/education reflects the growing global acceptance of online learning. Education responses evolve with the evolution of the pandemic. Although distance learning and education are frequently interchanged, King et al. (2001) argue and oppose the interchangeable use of the terms, because differences in time and place limited their definitions (Volery & Lord, 2000). Furthermore, Moore et al. (2011) assert that not only does an inconsistent terminology use exist for different delivery modes but also different expectations and perceptions of the learning environment. For example, the digital learning environment was used for a long time in schools in Singapore; however, the professional development of teachers remained a challenge. Nik Ali and Nasir (2019) upheld the significant contributions and boundless efforts of Singaporean teachers to provide online learning platforms and resources. Inevitably, COVID-19 forced teachers to innovate when using digital technologies to teach young children (Undheim & Jernes, 2020). Tay et al. (2021) have argued that a one-size-fits-all software application does not
exist. Therefore, teachers must possess online pedagogical and digital knowledge for effective teaching and learning, including teaching students to develop independent learning skills, intrinsic motivation, and discipline in the online learning environment beyond class hours.

Chan (2021), who advocated the use of online learning in response to COVID-19, highlighted the importance of maintaining face-to-face teaching delivery—blended learning. Teachers were encouraged to embed formative assessment in the new blended learning environment to substitute for traditional classroom assessment. While attempting to practice blended learning and taking full advantage of optimal interaction, unfortunately, a few countries shifted to an online asynchronous teaching mode. Ng (2021) argued that effective blended learning occurs when if the capacity exists for student-paced and directed learning beyond class hours. To attain the optimal learning environment, e-learners and partially online students exhibited a strong preference for campus-based instruction while enjoying the convenience and flexibility of online learning (Skelton, 2009). Hence, Skelton (2009) continued to regard blended education as the best learning environment to be introduced and implemented by educational institutions. Will online or blended learning take place in Brunei schools beyond the pandemic? The answer to this question has yet to be determined. In view of this question, the next sub-section has looked into several studies on the perceptions of stakeholders toward online learning policies. Eliciting the perceptions of stakeholders, mainly teachers and parents, can become part of policy assessment, which may relatively help governments in problem framing, structuring, and decision making.

**Teacher experiences**

The perception of teachers is crucial to the development of educational policies. The rapid increase observed in the number of children with COVID-19 heightened the awareness of governments about the need to improve the professional development of teachers in online learning along with the impacts and barriers faced by schools. Evans et al. (2020) examined the reflections on benefits and challenges of online learning written by nine English teachers during the COVID-19 lockdown in the United Kingdom. Challenges include the loss of social element (students cannot share ideas with one another and their teachers), inadequate access (students may not have Wi-Fi or data to attend live online lessons or even a computer or an iPad to access lessons), and lack of adult supervision (students may not have guardians at home to help them with lessons). Despite these concerns, online learning also benefited teachers and students through the preparation of digital content, mutual discussion, and support. Undeniably, high-quality instructional materials, which are organized for ease of navigation and use in the online learning environment, were considered critical to student success. However, noting that student engagement remains integral for an efficient online learning environment is also important.

Bray et al. (2021) investigated the perceptions of teachers about student engagement during school closure in Ireland and demonstrated that the problems associated with the shift to online learning are reliant on the focus and self-motivation of students. Teachers reported a decrease in student engagement during remote learning, which was attributed to the lack of interest by students (19%), lack of support from home (18%), availability of devices (18%), and technological know-how (14%). The shift to remote schooling and student inaccessibility to appropriate devices, space, and resources further compounded the existing inequality with regard to material, social, and cultural resources. Watson (2020) described a personal, difficult, and unsettling experience when transitioning students to remote learning. Communicating with students was challenging due to the limited or lack of Internet and technology access. Moreover, several students were burdened with at-home care responsibilities for younger siblings during their online learning activities when parents are at work. In addition to addressing equitable access to technology for students and teachers, Watson (2020) prominently raised the issue of family support for and parental engagement in online learning for students.

Lukitaningsih et al. (2021) identified four parental assistance models in online learning in Medan, namely, (a) the inactive participation model (no assistance/facilitation from parents); (b) active parent model (parents actively motivate children to learn); (c) relatively active model (parents assists with online learning and communicate with teachers); and (d) very active (parents facilitate the learning devices of children, assist with online learning, and communicate with teachers). Hoy (2021) referred to the interaction between family members and teachers and among all elements of the microsystem as a mesosystem. When addressing parental assistance, decision among possible solutions is not straightforward, and striking a balance can be vague such as combining office life with the flexibility of working from home to support the online learning of children. This scenario certainly requires reforms to the existing work policies of government agencies and private sector entities.

Lie et al. (2020) highlighted financial assistance for the Internet bills of teachers. Based on the perceptions of 18 teachers from four regions in Indonesia, the author identified three key barriers that hinder effective engagement with online learning: limited or no access to technology and self-regulation for learners, limited prior knowledge about pedagogical/technological online learning for teachers, and financial assistance. Specifically, financial assistance and incentives in online learning can be offered in the form of quotas, such as the purchase of smartphones, scholarships,
allowances, loans, and the utilization of modern technologies for the digitization of education systems (Ahmed et al., 2021; Lukitaningsih et al., 2021). Apart from financial support, Azzahra (2020) emphasized the role of local governments in being more active in providing schools with technical assistance, such as access to recording studios and equipment, instead of relying on initiatives from the central government.

As teachers become immersed in adapting to these unprecedented instruction methods, high levels of job burnout and human capital issues are likely to emerge as key challenges for policymakers even after the pandemic. Based on a study on the perception of 68 primary school teachers in Nepal regarding the transition to online learning, Lemay et al. (2021) found that teachers suffered from two major challenges, namely, learning new technologies and adapting their lessons to online learning. Two-thirds of the teachers asserted that physical classrooms cannot be literally transposed to online learning environments. Using other approaches, such as the flipped classroom, can be applied to accommodate student-centered teaching, where the most worrying concern is teacher retention. Failure to cope with the stress and challenges associated with online teaching and learning may lead to issues in teacher retention.

MacIntyre et al. (2020) examined the stress and coping strategies of a group of language teachers in the online teaching and learning environment imposed by COVID-19 and found that workload, family health, loss of control at work, lack of recreation, and blurred lines between work and home were the top five sources of stress. A further study conducted by Sokal et al. (2020) reported time management, technology issues, parents, balance between home and teaching, and lack of resources as the main concerns related to online teaching during COVID-19. A high level of teacher turnover may not directly impact academic and administrative development but relatively influence the academic experiences and achievements of students (Weiner, 2012). Rosenberg and Anderson (2021) demonstrated that nearly half of public school teachers surveyed resigned since March 2020 due to COVID-19 and not online learning.

**Parental experiences**

Another important consideration for online schooling systems during COVID-19 is parental experiences. Lau et al. (2021) asserted that the educational responsibilities of parents are fundamentally important, because young children are likely to be dependent on assistance from caregivers in accessing and completing online learning. Exploring the perception of parents is timely and necessary to inform ways to enhance online teaching practices and the bond between children and their parents (i.e., parent academic involvement). Parent academic involvement refers to “parents’ work with schools and with their children to benefit their children’s educational outcomes and future success” (Hill et al., 2004, p. 1491), including volunteering at school, parent–teacher communication, involvement in academic-related activities at home, and the quality of parent–teacher relationships (Hill & Taylor, 2004).

Carpenter and Dunn (2020) discussed the parental experience of becoming teachers for children at home in the United States. The authors pointed that the experiences of parents varied according to school type. Parents with children in private schools performed better than those in traditional public or charter schools. The authors argued that private schools tend to provide “proper” classes and “more often chose to communicate with students, create real-time, online programs, and set higher expectations” (p. 24). Regardless, the parents surveyed reported positive experiences with online home schooling. Naturally, not all parental involvement is positive. Parents who lack the time and ability to become teachers at home favored school reopening (Lase et al., 2020). Richardson (2020) shared that working parents in the United Kingdom were required to juggle among work, school, family, and childcare arrangements. Work schedule was disrupted due to insufficient at-home childcare. Moreover, Bhamani et al. (2020) interviewed 35 parents from Pakistani urban areas and pointed out the inadequate guidance and strategies for caregivers in supporting the learning of children. Similarly, parents in the Philippines and parts of the United States and Western Europe perceived that schools provided insufficient support for the online learning of children and assigned blame to the system instead of teachers (Agaton & Cueto, 2021; Price et al., 2021). This case is especially true for parents of children with special needs.

In addition, wealth disparity was reported to be the biggest challenge in achieving the policy goal of online teaching and learning. Affluent parents can afford to be a teacher–parent to their children compared with working class parents (Francis & Weller, 2021; Gibbons, 2020; Herald, 2020). Goudeau et al. (2021) identified digital, cultural, and structural divides as key barriers to parental ability to provide appropriate support for children during online learning. The study highlighted that socio-economic disparity and the social class achievement gap partially explain the decline in learning motivation and cognitive abilities of children; furthermore, these disparities only magnified the digital divide. The global crisis brought by COVID-19 pushed the education sector into the digital world, and changes in parental behavior toward online learning were considered to likely exert long-term effects after the pandemic. However, not everyone is ready to embrace increased digitized existence. Despite the challenges faced by teachers and parents toward online teaching and learning, a few countries issued the call to ensure that their online learning systems are ready to respond to future crises.
Thus, whether online learning policies can be continually implemented in Brunei for primary and secondary education after the pandemic phase of COVID-19 is worth investigating. Not only research on online education policy regarding primary and secondary, including sixth form levels, of education but also the examination of the perspectives of teachers and parents in one study is limited, particularly in the context of Brunei. The literature generally employs teachers or parents as key participants. In addition, it examines more of the effects of COVID-19 on online learning pedagogies and instructional strategies and less of how online learning addresses the demands of stakeholders and their engagement in education. Thus, the current study contributes to the literature by enhancing the understanding of the needs and constraints of stakeholders to ensure the smooth delivery and implementation of online learning policies in preparation for future crises in Brunei and not only limited to the context of the COVID-19 pandemic.

In summary, this study aims to solicit joint perspectives from parents and teachers regarding the implementation of online teaching and learning policies during COVID-19. The participants are teachers and parents of young students specifically in primary, secondary, and sixth form schools in Brunei. The study identifies four enabling factors, namely, policy and governance, people (skills and knowledge), process (tools, supporting mechanism and infrastructure); and partnership (triad—teachers, parents and students), that can help researchers assess the effectiveness of online learning policies through the perspectives of teachers and parents (Fig. 1).

**Methodology**

**Research design**

The study employed a qualitative research design, and data were obtained from multiple sources. Analysis was conducted thematically using the four themes in Fig. 1, where interview snippets were coded inductively.

**Data sources**

The study derived data from three sources (Table 1). The socio-economic status of parents was determined according to profession and whether their children are enrolled in state-funded or fee-paying schools.

The study used the snowball and convenience sampling techniques to identify the respondents, and consent was

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**Table 1** Data types and sources

| Data type             | Data source                                                                                                                                 |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| Documentary data      | Press releases from relevant authorities (Ministry of Education, Ministry of Religious Affairs, and Prime Minister’s Office) between August and October 2021  
Ministry of Education website  
Ministry of Education documents  
Book on Brunei education policies (Mail et al., 2022)  
Newspaper articles  
Recordings of press conferences featuring the Minister of Education between August and October 2021 |
| Public social media data | Screenshot from Cigu Brunei, a public Facebook page that provides teacher support |
| Interview data        | Informal conversations via semi-structured interviews with parents and teachers  
Both were asked to elaborate on the following questions:  
What do you think of the online teaching and learning policy?  
What do you think of blended learning?  
How has your children (for parents) or students (for teachers) e-learning experiences been? |
Data analyses

Documentary data were analyzed to identify the policy initiatives and guidelines introduced by the government of Brunei to facilitate and ensure the effectiveness of online teaching and learning during the second wave of COVID-19 between August and October 2021. Interview data were analyzed in a thematic manner (Nowell et al., 2017) according to the four enabling factors in Fig. 1 and were coded inductively:

1) Policy and governance;
2) People (skills and knowledge);
3) Process (tools, supporting mechanism, and infrastructure); and
4) Partnership (triad—teachers, parents, and students).

Based on these data sources and analyses, the study drew conclusions and recommendations for teachers, parents, and policymakers in designing education and learning experiences in online spaces.

Limitations

This study has two main limitations. First, the results were not generalizable due to the small sample size. Instead, the study mainly focused on transferability (Lincoln & Guba, 1985). Thus, to ensure that the findings were transferable to non-Bruneian contexts, it provided rich descriptions by the respondents (Table 2), and multiple data sources were obtained for data triangulation (Patton, 2015). Second, conducting purely online interviews may relatively influence the seriousness of the perceptions of the respondents regarding the long-term impacts of COVID-19 on education. Thus, emphasis was communicated on the seriousness of the issue by mainly focusing on policy.

Findings and discussion

Online learning and digital literacy policy initiatives

Prior to the introduction of the e-learning policy within the education system in Brunei (Sistem Pendidikan negara Abad ke-21, hereby SPN21), the MOE established the Department of Information and Communication Technology in 2001 to spearhead ICT in education initiatives and provide support in terms of policy and technology, including info-structure and infrastructure, professional development, and guidance for stakeholders undertaking ICT in education initiatives and projects (MOE, n.d.). Its vision and mission were “transforming education through innovation” and “to provide quality, secure, effective, and efficient ICT services” (MOE, n.d.).

Teacher training on e-learning occurred prior to establishing SPN21 in 2009. The MOE and UNESCO hosted the 2nd Regional Workshop on ICT entitled “Integrating Training for the Next Generation of Teachers” in 2008 (Mail et al., 2022), 1 year before the establishment of SPN21.

In terms of the e-learning policy, the e-Hijrah strategic framework and blueprint was launched within the e-learning strategic plan for 2010 (Mail et al., 2022). A part of this e-learning strategic plan included initiatives for achieving the vision and mission of the MOE for 2010 as follows:

- Provision of reliable and efficient ICT resources;
- Provision of appropriate and relevant training to all stakeholders;
- Increased ICT pervasiveness in the working and learning environments;
- Transformation of teaching and learning;
- Ensuring excellence management and administration in the education system; and
- Establishment of e-education to improve the research and development capabilities of the MOE.

The e-Hijrah strategic framework and blueprint were an initiative of the MOE to provide school Internet access and were a continuation of a previous e-education project called MobiTel or Mobile Teaching and Learning, which was launched in 2007 (Mail et al., 2022). The e-Hijrah strategic framework includes the Whole School ICT Development project, which was designed to transform education by developing innovative approaches to teaching and learning (MOE, 2014).

Following the formulation of the e-Hijrah strategic framework and the introduction of digital literacy as part of the curriculum for SPN21 in 2008, the 2018–2022 MOE...
| Pseudonym | Parent | Teacher | Teacher–parent | Others | Spouse | Children |
|-----------|--------|---------|----------------|--------|--------|----------|
| 1 Dania   | x      | State-funded primary school/ < 5 years of experience | x | x | x | x |
| 2 Iman    | –      | State-funded secondary schools/ > 5 years of experience | – | Teacher | One in fee-paying primary school, one in fee-paying secondary school |
| 3 Lisa    | –      | Not a teacher | x | COVID-19 frontliner in the medical sector | COVID-19 frontliner in the security sector | One in state-funded school, two in fee-paying primary school |
| 4 Julia   | –      | State-funded sixth form college/ > 5 years of experience | – | COVID-19 frontliner in the security sector | Three in fee-paying primary school |
| 5 Farah   | –      | Not a teacher | x | Civil servant | COVID-19 frontliner in the security sector | Two in fee-paying kindergarten school |
| 6 Maria   | –      | State-funded sixth form college/ > 5 years of experience | – | Teacher | Three in fee-paying primary school |
| 7 Rania   | X      | Fee-paying primary school/ < 5 years of experience | x | X | x | x |
| 8 Tatiana | –      | State-funded secondary school/ > 5 years of experience | – | Teacher | Two in state-funded primary school |
| 9 Aiman   | –      | State-funded primary school/ > 5 years of experience | – | Teacher | One in fee-paying secondary school, one in fee-paying primary school |
| 10 Aleeya | –      | State-funded religious primary school/ > 5 years of experience | – | x | One in fee-paying primary school |
| 11 Helen  | –      | Not a teacher | x | Finance sector | x | Four in fee-paying primary school |
| 12 Bob    | –      | Not a teacher | x | Semi-government institution | x | One in fee-paying school |
| 13 Reefah | X      | State-funded primary school/ > 5 years of experience | x | x | x | x |
| 14 Diana  | –      | Not a teacher | x | Civil servant | x | One in state-funded secondary school, four in fee-paying primary school |
| 15 Elaine | –      | Not a teacher | x | Civil servant | x | One in state-funded primary school |
| 16 Leslie | X      | Fee-paying primary school/ > 5 years of experience | x | X | x | x |
| 17 Jane   | –      | Not a teacher | x | Stay-at-home mother | COVID-19 frontliner in the transportation sector | Two in state-funded primary school |
| 18 Mia    | –      | Not a teacher | x | COVID-19 frontliner in the hospitality sector | COVID-19 frontliner in the hospitality sector | Three in fee-paying primary school |
Strategic Plan (Strategic Enterprise Performance and Delivery Unit, 2019) once again highlighted ICT services for education 10 years later. Digital literacy was identified as value-added knowledge within SPN21 (MOE, 2013), which enables students to develop skills to:

- Utilize ICT applications in a creative manner and communicate their learning confidently and selectively;
- Acquire, critically analyze, process, deliver, and share information;
- Communicate learning through e-learning platforms locally and globally; and
- Increase competency in informational, instrumental, and strategic skills.

Online learning and digital literacy policy initiatives were revisited during the first (March to July 2020) and second (August to December 2021) waves of COVID-19. Shahrill et al. (2021b) extensively described the steps taken by the MOE to ensure that teaching and learning activities continued on the first wave. These steps included utilizing government media to convey content to primary school children, whereas teachers were expected to conduct online classes using various communication platforms and were given the freedom to select the best possible methods for online teaching and learning (Kon & Roslan, 2020). The freedom in selecting the best online teaching and learning led to teachers encountering a big hurdle, because all grassroots stakeholders were unfamiliar with online education (Shahrill et al., 2021b).

Given that online learning policy initiatives have existed in Brunei since 2010 with the implementation of SPN21 and the e-Hijrah strategic framework (Mail et al., 2022), the question that emerges is: Why did teachers and parents face difficulties in the move toward online learning during the first wave of COVID-19 as shared by Shahrill et al. (2021b)? Moreover, were the challenges faced during the first wave similar to or different from those faced in the second wave (between August 2021 and January 2022)?

The answer to the abovementioned questions lies in the different nature of online teaching and learning prior to COVID-19, which would still occurred in schools through “interactive classroom technologies” (Project Overview!Interactive Technologies for Teaching and Learning, 2022). Online teaching and learning during the pandemic were home-based and constituted the second policy initiative introduced during the first and second waves of COVID-19.

On August 18, 2021, the MOE announced that schools were temporarily reopened to function online (The Star, 2021). Classes at all educational levels were forced to switch to online mode, and teachers can execute their job responsibilities from home. On August 10, 2021, an article on a work-from-home protocol for civil servants and private sector workers was released under the authorization of the Prime Minister’s Office. In the protocol, organizations must establish standard operating procedures for any employees who can work from home. In view of the nature of the teaching profession, where the majority of the duties of teachers can be accomplished remotely, such protocol indicated that the work-from-home initiative was no longer under the discretion of leaders. Thus, school leaders were expected to allow the teaching staff to work from home, and many schools prohibited entry to school compounds during the first month of the second wave.

Perceptions of teachers and parents

This study examined the joint perceptions of parents and teachers on three dimensions, namely, the implementation of blended learning, use of online pedagogy, and enhancement of the e-learning experiences of students. The study analyzed each dimension using the four factors (Fig. 1) and discussed as follows.

Policy and governance

The main issue that many parents and teachers faced regarding home-based online learning was the lack of proper guidelines and policies. A teacher–parent, Iman noted that:

> MOE should have … policy implemented regarding online study that will not burden both students and teachers.

In Pakistan, Bhamani et al. (2020) noted that parents/guardians lacked guidelines. In Brunei, teachers/school leaders lacked guidelines on conducting online learning. This scarcity in information led to disparity in online learning experiences, where a few schools offered synchronous online teaching and learning, whereas others only provided an asynchronous experience. Lisa, whose three children went to three separate schools, noted the following:

> Schools … have a different approach on how they want to do online learning. Hanisa’s … it’s like a real virtual class. Haziq’s … mostly only give work with a little interaction …. Halisha’s … only give homework, no feedback/interaction at all.

However, in contrast to the parental experiences narrated by Carpenter and Dunn (2020), the parents in the current study experienced similar issues regarding the disparity in online learning experience regardless of school type. Lisa’s daughter (quoted above) was only given homework despite enrolling in a fee-paying school, which is similar to the scenario for Jane’s children, who were only given homework via WhatsApp in state-funded schools.
Teachers (and parents) also discussed the issue of transparency. Figure 2 depicts a WhatsApp screenshot of a teacher (not involved in the study) sharing frustration on the lack of transparency on the public Facebook page called Cigu Brunei, especially in terms of whether or not the home-based online learning policy would continue to the end of the school year.

The former Minister of Education answered the question on continued online learning to the end of the school year (November 2021) during the question-and-answer session of a press conference recorded on September 27, 2021:

Schools are to continue teaching until the end of the academic calendar.

However, teachers were unenthusiastic about the above-mentioned initiative given the low attendance (Fig. 2). Julia reported low attendance since the beginning of online learning:

We receive data that online attendance do not reach 50%. My colleague ... had to wait for six students to show up.

The need to return to the school compound is crucial as parents, who were employed as COVID-19 frontliners, found that monitoring their learning of their children challenging. Lisa shared the following:

... given that we are frontliners, we find it hard to monitor the kids’ learning.

Farah is another parent with a frontliner husband and shares Lisa’s view:

Having the kids in the same room is too distracting, yet separation is impossible, as I need to make sure they follow instructions.

Teacher–parents faced the same issue, as Iman noted:

The challenge is having to monitor my child’s learning and my teaching at the same time!

Given these challenges that parents faced in terms of monitoring their children’s learning while juggling work duties, which is similar to those experienced by parents in the United Kingdom (Richardson, 2020), the parents were asked whether or not schools should open for children of COVID-19 frontliners, similar to that the UK in 2020 (Weale, 2020).

But who will teach? (Julia)

I do not want my kids to be discriminated because their father is a frontliner; otherwise, people will say my kids can ... infect others. (Farah).

When asked whether a blended learning policy is an alternative to home-based online learning policy, Bob responded:

Blended learning gives strong emphasis on human interaction. Human interaction is a crucial aspect for the children to develop their social skills and social involvement.

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1 A Cabinet reshuffle took place on June 7, 2022, where a new Minister of Education was appointed.

2 Translated from the original Malay transcript: disarankan kepada sekolah-sekolah untuk terus meneruskan pelajaran sehingga akhir kalender pendidikan nanti.
However, for blended learning policy, Helen noted that its implementation is only possible if employers can accept flexible working environments.

People (skills and knowledge)

Online learning policies require proper knowledge and skills, especially when the physical proximity between teachers and students is absent, which is the case with home-based online learning. Parents cannot be expected to become the teachers of their children, as they may not possess content knowledge. If they do (e.g., literacy at the primary school level), then parents (except for teacher–parents) lack pedagogical knowledge, because specialized knowledge is only taught in teaching degrees. Regardless of pedagogical content knowledge, other teachers find that ensuring that their synchronous classes are not lectures is difficult.

Furthermore, gauging the understanding of students is a challenge, especially for asynchronous lessons. Dania noted that parents may provide answers on behalf of the students. Rania shared the same issue with synchronous lessons. Conducting synchronous lessons indicated that the parents of her students cannot answer on behalf of their children. However, probing the understanding of students remains a challenge given the non-existent physical proximity between teachers and students. Hence, teachers exclusively conducting asynchronous online lessons is unsurprising given the need for enhanced knowledge and skills for online teaching.

Nonetheless, home-based online learning policies require skills beyond content and pedagogical content knowledge. Stakeholders should also possess various skills ranging from video-recording/video-editing to using teleconference apps, to accommodate clashing timetables. An example is Julia, who video-recorded her sixth form classes if it clashed with the online classes of her children.

Similar to Carpenter and Dunn (2020), the parents in the current study recognize the benefits of home-based online teaching and learning. Lisa noted:

My children get to learn and familiarize with the use of computer and useful apps like MS Teams, Zoom.

The teachers also shared the same view on the benefits of online learning. Iman noted that,

The students (including my children) can expand their technical skills, students prepare themselves well to enter a competitive (sic), digital, and innovating (sic) job market in the future.

Indeed, the parents and teachers revealed a disparity in the possession of technological knowledge for online learning at home, which is similar to the result of Goudeau et al. (2021). Within her capacity as a parent, Julia shared that a few parents lack knowledge on “how to copy and paste to note attendance.”

Process (tools, supporting mechanism, and infrastructure)

Tools, supporting mechanism, and infrastructure are required for a successful home-based online learning. The policy provides flexibility in how teachers conduct online lessons. However, this flexibility is a double-edged sword, because it led to high expectations, as Julia perceived:

Don’t pressure teachers to make use of advanced tech/apps. The most important aspect is that the students learn.

Many of the parents expressed gratitude that they were able to afford devices for their children, such as Julia, whose children each have their smartphone. However, despite the provision of devices, grassroots stakeholders continue to need financial resources for Wi-Fi or mobile data, which is a situation similar to those reported by Sufian et al. (2020) and Lie et al. (2020). Jane, a stay-at-home mother, mentioned having to ask financial help to buy mobile data when finances were tight.

Indeed, Jane’s situational experience was also experienced by Aiman’s students, who complained of inadequate financial resources if synchronous lessons were conducted on a daily basis, as well as the expectation of Iman’s absentee students, who reported the lack of mobile data/smartphone.

Dania encountered parents in similar situations:

We have a problem to make sure that the kids do their work, because parents do not have enough money (for mobile data).

The respondents also reported difficulty in balancing household and work responsibilities, as Julia noted: “Some-how, there is … no line between … work … and … family.”

Hence, the need emerges to establish support mechanisms if home-based online teaching and learning were to occur again.

Partnership (triad relationship—teachers, parents, and students)

As teachers and parents share the same goal, that is, student learning, the observation that the parental assistance model by Lukitaningsih et al. (2021) was at play for the parents interviewed is unsurprising. The teacher–parents and non-teacher parents fall under the very active category. One such parent is Iman:

My son who is in the secondary school, he will update us about his lessons via WhatsApp. He will attend his class online…in his room. After his lesson
finishes, he will come to the living room and we will discuss his lessons.

Despite their difficulties in monitoring their children’s online learning as COVID-19 frontliners, Lisa and her husband still fall under the very active category:

When at work, I will ask my sisters to…help setup laptops and supervise the youngest.

However, the parents encountered by the teachers were different. Many fell under the inactive participant model (Lukitangsih et al., 2021). Julia expressed her frustration with parents of her students (sixth-formers), because they exerted no effort to ensure that their children attended their online lessons:

I have to be the person who wake other people’s children up for their online classes!

The children’s lack of self-regulation and discipline were issues for teachers and parents. Parents, such as Lisa, could not physically monitor her child who lacked self-regulation due to her role as a frontliner. Other parents, such as Iman, resorted to teaching lessons and monitoring his daughter simultaneously. Other teacher–parents echoed the challenge to simultaneously monitor their children’s learning and their teaching, such as Julia:

Juggling between … my own classes and my children’s virtual classes … is itself a challenge.

Similar to Tay et al. (2021) and Bray et al. (2021), work discipline and self-motivation (or lack thereof) of the students were the reasons for Lisa’s frustration when her youngest was only offered short asynchronous/no feedback lessons, because the child opted not to self-study outside class hours. When asked whether or not she communicated her frustration to the teachers, Lisa said:

The teachers won’t communicate with us!

Iman echoed the statements from the other respondents:

My other challenge is how to help students understand that they have to … stay on top of their work, since they are not being forced to go to a classroom with the assignments.

### Table 3  Recommendations to address issues on all four factors

| Factors                  | Recommendation                                                                                                                                 |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| Policy and governance    | • Schools should develop a holistic policy that can help address issues related to teaching and learning activities, such as flexibility for teachers in working at their pace and academic freedom to design e-learning resources, and student concerns regarding the registration for online class attendance, virtual discussions, assessments, and criteria to aid in performance monitoring  |
|                          | • School culture and leadership play a significant role in teacher commitment (Crosswell, 2006). School cultures that create environments where teachers experience increased autonomy on the job, and school leaders that exert a strong effect on the willingness of teachers to commit, although less experienced teachers are more likely to be sensitive to the management style of school leaders (Tsui & Cheng, 1999) |
| People                   | • Introduce self-regulated learning strategies to help strengthen student motivation (Weinstein et al., 2000). This aspect is crucial for improving student work discipline, especially among young children, to encourage academic achievement (Dignath et al., 2008) |
|                          | • Students need to be taught basic management skills from an early age to let them internalize their skills and prepare them for lifelong success. Many teachers and parents are skeptical about this notion; however, Berry and Hughes (2020) demonstrated that online learning can enhance work–life balance for the majority of students compared with alternative methods that employ a traditional fixed time and place for classroom learning |
| Process                  | • Enhance IT infrastructure for online/blended learning to provide high-quality learning experiences for grassroots stakeholders. An important point is that all stakeholders bear the responsibility to perform more than an economic cost–benefit analysis and maximize the societal benefits of infrastructure investment. Thus, government intervention is required for companies in the IT sector to offer low-cost Internet |
|                          | • Knowledge and information sharing can help reduce the pressure faced by grassroots stakeholders. Schools should create e-learning sharing portals for resource-sharing. Hence, an appropriate knowledge management system must be in place for long-term use and to enhance the talent and leadership management process to create a knowledge-based society through e-learning (Lee, 2006) |
| Partnership              | • Schools should foster school–parent partnership by addressing the concerns of parents in a responsive and proactive manner to gain support, and schools can enrich the pedagogical understanding of parents regarding e-learning and address their concerns through school–parent communication and peer support (Kong, 2018) |
|                          | • Teachers and parents must be held accountable to create a conducive home-based learning and working environment. Given that teachers pose pedagogical content knowledge, the role of the teacher is to continue to teach in a home-based online learning environment. For parents, the lack of pedagogical content knowledge does not mean exemption from accountability. Instead, the role of parents is to monitor and facilitate learning in the home-based online learning environment |
Parents noted that access to materials was useful for monitoring their children’s understanding, which is similar to the parental experiences reported in Hill et al. (2004), and cover any missed recorded video lessons/discussion. In addition, the parents found that creating a conducive learning environment at home is important. Bob noted:

... quality learning begins with parents …. Parents need to create high-quality learning experience through creating a conducive learning environment

Recommendations

The study outlines several recommendations to address the issues that emerged from the joint perceptions of parents and teachers on all four factors (i.e., policy, people, process, and partnership; Table 3).

Conclusion

This study demonstrated that online learning policy initiatives existed in Brunei before the pandemic. However, the need to enact these initiatives in homes during the pandemic illustrated that the facilitation of online learning during the digital age require good policies, school governance, and people to manage the education system. Additionally, the provision of high-quality learning experiences for students when confined in their own homes required tools, infrastructure, and access, because the digital divide that occurred in online learning as reported in this study was more related with financial resources instead of access to the Internet.

The respondents shared similar perspectives despite the differences in levels of education, teaching experiences, socio-economic status, parental careers, and the schooling levels of their children. Building on the findings, further research is required to assess the level of readiness of stakeholders in terms of blended learning. Given the debate among teachers and parents regarding the possibility of implementing blended learning after the pandemic, empirical evidence is ultimately required to gage public support for blended learning, particularly its influence on the independent learning of students, the preparation and experiences of teachers, and the involvement of parents. However, the study was unable to address ethical issues (Anshari et al., 2022) involving digital technology use among children.

This study discussed the identification of online learning policies in Brunei prior to and the second wave of the pandemic, as well as the joint perceptions of teachers and parents regarding the home-based online learning policy during the second wave of COVID-19 between August and December 2021. Thus, the need exists for research on the third wave (between January and March 2022), early endemic (ended on 31 May 2022), and the current endemic phase (1 June 2022–present). Finally, a critical need emerges for the provision of support through intervention tools, such as policies, directives, initiatives, financial assistance, and actionable programs for vulnerable individuals and institutions.

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Declarations

Conflict of interest Both authors report no conflict of interest.

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