#NextGenEdu

Crisis-led approaches to teaching and learning in Bangladesh

WORKSHOP 1 REPORT

Matluba Khan[1], Thomas Smith[2], Mohammed Zakiul Islam[3], Kusha Anand[4], Tahrima Hossain[5], Shakil Ahmed, G. M. Rakibul Islam[6], Afsana Sadiq Atuly[6], Azwa Nayeem[6], Salman Sabbab[6], Mehdi Hassan[6], Md. Afzal Hossain Sarwar[6]

The outdoor classroom. Credit: Dr Matluba Khan

[1] Lecturer in Urban Design, Cardiff University, corresponding author, email: KhanM52@cardiff.ac.uk

[2] Senior Lecturer in Human Geography, Cardiff University

[3] Professor, Department of Architecture, Bangladesh University of Engineering and Technology

[4] Research Associate, Cardiff University

[5] Project Coordinator, Cardiff University

[6] Core Team, #NextGenEdu

Executive Summary

Education systems in low-income countries like Bangladesh have rapidly responded to the Covid-19 pandemic with extremely limited resources, resulting in adaptive and unique approaches to teaching and learning (use of mobile phones; national television; online live teaching and resources), but many children are missing out on critical periods of their education. The situation is exacerbated due to the Covid-19 pandemic and reform in the education policy is underway in response. The research project 'Crisis-led approaches to teaching and learning in Bangladesh: New frameworks for outdoor, blended learning in low-income country contexts' aims to address these challenges and inform policy through developing a framework to combine digital learning with outdoor learning for primary education in Bangladesh, to mitigate the impact of the pandemic, but also to improve children's educational and wellbeing outcomes in the longer term.

Through working in partnership with BUET and #NextGenEdu and directly with primary teachers and schools, we will develop an evidence base of the emerging responses to remote, blended, and outdoor learning in schools, households, and neighbourhoods during the pandemic and develop a collaborative network to address current problems and frame new solutions. This workshop report draws on the discussion in the first stakeholder workshop in Bangladesh supported by HEFCW GCRF funds. The workshop held in May 2021 over zoom, was organised jointly by Cardiff University, BUET, a2i, and #NextGenEdu. It was planned with stakeholders including the Director General of NAPE, Government Officials, education experts, teachers, practitioners, parents, urban planners, architects, and national and international NGOs, 57 participants from several national (both government and private) and international organisations took part. The workshop activities focused on the collective exploration of the existing educational responses to the pandemic, challenges, and success stories of teaching and learning during the pandemic in the context of Bangladesh, and insights on the development of a blended learning framework.

The pandemic has had a severe impact on education across Bangladesh as children's learning has continued to be disrupted since school closures on the 18th of March 2020. A range of digital and online solutions to distanced and blended learning were discussed in the workshop. These ranged from nationwide approaches (e.g., centralised online educational resources such as Muktopath, and online meeting tools including Google Meet, Zoom, Imo, WhatsApp), to individual teachers' methods of delivering teaching and learning using digital tools (e.g., building own Facebook pages, and self-designed learning spaces at home). A number of other 'low-tech' solutions were discussed at a range of scales, some focusing on 'tools' (e.g., 'phoneschooling', lessons broadcasted through TV and radio) and others focusing on teachers' pedagogic methods (e.g., physically delivering materials to students' homes). Whilst the majority of workshop participants were enthusiastic about outdoor learning, there were limited examples (e.g., courtyard teaching) discussed of where outdoor learning had been effectively taking place. A range of possibilities was discussed that include the use of outdoor spaces like streets, community spaces, schoolyards, gardens, or fields.

One of the most critical concerns for the workshop participants was about **inequalities** associated with blended and distanced learning for both teachers and children. The participants were apprehensive about the substantial disparities in access to technology, and other physical and technology-relevant infrastructure, as a2i estimated that 53% of people do

Address for correspondence: Dr Matluba Khan, School of Geography and Planning, Cardiff University, Glamorgan Building, King Edward VII Avenue, Cardiff CF10 3WA
Tel: +44 (0) 29 2087 4994, Email: KhanM52@cardiff.ac.uk

not have any access to the internet. **Awareness of available resources** was also raised as an issue. Participants reported that students missed out on important social contact and their increased screen time was a matter of concern for parents. Whilst school attendance at primary and secondary levels had improved over the last decade, a wider scale concern was the extent to which children will return to school as many would be unable to 'catch up'. Some participants, therefore, felt that the **focus on digital devices was misplaced** and that instead much more focus should be placed on **low-tech learning solutions.**

Workshop participants felt strongly that teachers need access to relevant, quality professional development and support to be able to continue teaching in crisis contexts. While **positive examples** of schools being proactive, and quickly **delivering teacher training in response to school closures** was evident, there was considerable concern for the **lack of training for teachers** to use digital tools to conduct distance learning, with **significant inequalities** noted between teachers in different economic, personal, and locational circumstances. A range of problems with high-tech solutions was discussed (e.g., teacher skills, quality of delivery, interactivity of platforms, and suitability for primary age children, student, and learner concentration) and some alternatives were suggested (e.g., printed materials, outdoor learning). Participants in the workshop recognised the importance of blended learning (a combination of remote and outdoor learning) both in the Covid-19 pandemic and for potential future 'crisis', they also expressed concerns about lack of teacher training for delivering teaching outdoors, lack of space and quality of outdoor environments.

In terms of **recommendations** for policy and policymakers, the planning and designing of teaching approaches must take into consideration the education system, learning environments, and community and home contexts in which students and teachers live. Centrally generated resources must be carefully mapped onto teacher and learner skills, and teacher training in digital and outdoor pedagogies should be prioritised. Outdoor and home learning spaces should be identified, studied, and integrated into learning where possible and stakeholders should be consulted to better adapt to the current and future crisis. Stakeholders include parents, teachers, headteachers, NGOs, and other agencies, and importantly, students themselves. While the Government of Bangladesh has taken the right initiative in utilising multi-modal remote learning delivery (e.g., television, radio, online, and phone-based teaching), it will be crucial to ensure effective measures are adopted to reach all school-aged children.

Address for correspondence: Dr Matluba Khan, School of Geography and Planning, Cardiff University, Glamorgan Building, King Edward VII Avenue, Cardiff CF10 3WA
Tel: +44 (0) 29 2087 4994, Email: KhanM52@cardiff.ac.uk

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Tel: +44 (0) 29 2087 4994, Email: KhanM52@cardiff.ac.uk

1.0 Introduction

Education systems in low-income countries have rapidly responded to the Covid-19 pandemic with extremely limited resources, resulting in adaptive and unique approaches to teaching and learning (use of mobile phones; national television; online live teaching and resources), but many children are missing out on critical periods of their education. Smartphones are widespread, but few children have access to computers and quality internet connections. Equally, children living in dense urban environments have poor access to greenspaces and associated wellbeing benefits. The situation is exacerbated due to the Covid-19 pandemic and reform in the education policy is underway in response. With this background, the current research project was developed with an aim to inform the education policy through developing a blended learning framework.

1.1 The research project

The research project 'Crisis-led approaches to teaching and learning in Bangladesh: New frameworks for outdoor, blended learning in low-income country contexts' aims to address these challenges and inform policy through developing a framework to combine digital learning with outdoor learning for primary education in Bangladesh, to mitigate the impact of the pandemic, but also to improve children's educational and wellbeing outcomes in the longer term. Through working in partnership with Bangladesh University of Engineering and Technology (BUET) and #NextGenEdu, and directly with primary teachers and schools, we will develop an evidence base of the emerging responses to remote, blended, and outdoor learning in schools, households, and neighbourhoods during the pandemic and develop a collaborative network to address current problems and frame new solutions.

The methods include a telephone based structured survey of 200 primary school teachers and headteachers gather quantitative and qualitative data regarding their approaches to remote learning (via internet or mobile), regularity of contact, barriers in teaching and learning during the ongoing pandemic, and ethnographic observation of 15 case studies of at home learning to explore how children and families have responded to the pandemic and children's experiences of at-home learning. Two workshops are planned as part of the project where the first workshop aims to collectively explore the existing responses to the pandemic, challenges and success stories of teaching, and learning and insights on the development of a blended learning framework.

1.2 The workshop

This workshop report draws on the discussion in the first stakeholder workshop in Bangladesh supported by HEFCW GCRF funds. The workshop held in May 2021 over zoom, was organised jointly by Cardiff University, BUET, UCL, a2i, and #NextGenEdu. It was planned with stakeholders including the Director General of NAPE, Government Officials, education experts, teachers, practitioners, parents, urban planners, architects, and national and international NGOs. The workshop activities focused on the collective exploration of the existing educational responses to the pandemic, challenges, and success stories of teaching and learning during the pandemic in the context of Bangladesh and insights on the development of a blended learning framework.

57 people with relevant knowledge and professional experience participated. They operate in various capacities within national and international organisations.

The workshop aims were to:
1. Introduce the research project 'Crisis-led approaches to teaching and learning in Bangladesh', share key themes from the review of the existing evidence-based approaches and initial findings from a pilot study.
2. Explore collectively the existing responses to the pandemic, perspectives on school closures, measures on reopening schools, and impact on teachers and children.
3. Identify ongoing innovative remote/blended teaching practices, and ongoing concerns/challenges.
4. Gather thoughts on a blended learning agenda, barriers, and challenges in the adoption of such an agenda.
5. Explore collectively ways to best support policymakers, NGOs, practitioners, and teachers in the implementation of a blended (digital + outdoor) learning framework.

Different professionals brought different perspectives to the table. Through interdisciplinary debate and discussion participants brainstormed perspectives on school closures, barriers in teaching and learning, challenges for policymaking, and teachers' professional development and ideas for blended learning framework for the future.

2.0 Background to the project: Existing knowledge on crisis-led learning

The pandemic has had a severe impact on education across Bangladesh. Education has continued to be disrupted since school closures on the 18th of March 2020. During the pandemic disruption to education, innovative measures have been adopted and rolled out by many governmental and non-governmental stakeholders for quick transition and to ensure continuity of education. The four common distance learning modalities—radio/audio, video/television, mobile phone, and online learning have been utilised to promote inclusion and to increase access to quality teaching and learning (Cobo et al., 2020; UNICEF, 2020). Whilst Bangladesh, like many Low- and Middle-Income Countries, is endeavouring to use TV, radio, mobile phone, and internet platforms to reach a maximum number of students, only 33% of people in the region have internet access, and only 43.9% of households in rural Bangladesh own a television (Abbas, 2020; Abdullah, 2020; UNICEF, 2020; Wadud, 2020). In other contexts, low-tech and no-tech delivery approaches are reportedly being developed as part of current planning, for example in Kenya, Rwanda, Uganda, and Ghana, but are not presented as priorities (Wagner and Warren, 2020). In China, where the response is focused mainly on the online provision, there is some mention of TV-based learning for those in hard-to-reach areas (Wagner and Warren, 2020).

Besides learning modalities, the home learning environment and associated home contexts are significant factors that impact the success of remote learning. Resources, including families' time, income, and human, social, and psychological capital are differentially distributed across and within families and impact upon the kind of support that parents and caregivers can provide to assist children's learning (Wagner and Warren, 2020). Findings from the study conducted by Save the Children (2020) indicate that parents reported lower levels of parenting self-efficacy to support their children's learning due to space or resource constraints.

The Covid-19 virus spreads with less virulence outdoors, and one feature of the pandemic across a range of contexts has been to highlight the need for outdoor physical activity and spending time in outdoor, 'natural' settings. Countries such as Denmark, Scotland, the USA, India, and Ethiopia have expanded their outdoor classroom environments in response (whether in courtyards, community parks, or trips to 'wilderness' spaces) (Bhat, 2020; Humphries, 2020; Ostfeld, 2020; Marquez, 2020; Tarafdar, 2020; Wadud, 2020; Wagner and Warren, 2020), while in other contexts, such as the UK, the pandemic has had a negative impact on the use of outdoor learning and activity centres. In other examples of the use of outdoor/digital space for learning that might normally take place in the classroom, in Bangladesh and India pre-recorded lessons for primary school students were broadcasted by a state-run television channel for children in outside spaces (Tarafdar, 2020; Wadud, 2020). Teachers in western India have painted village walls for outdoor pandemic classes, and teachers have been using these murals to help poor students keep up with their education in the pandemic (Tarafdar, 2020).

Outdoor classrooms are also one of the most cost-effective ways to increase school capacity (Laudato, 2021). The challenges that come with being outside all day – dealing with weather, building shelter, unearthing the unexpected – are embedded in the learning process (Laudato, 2021). From a pedagogical standpoint, nature and the outdoors can inspire children's inherent curiosity (Dietze and Kashin, 2018), and curiosity is the gateway to emergent curriculum approaches. Research has also illuminated the value of outdoor experiences for

child development and learning (Waters and Rekers, 2019). Before the pandemic, research conducted by Khan et al (2019, 2020) in Bangladesh demonstrates how children achieved learning gains in maths and science, physical, and socio-emotional development when attending classes outside that use features of outdoor environments to teach contents from the curricula. The physical qualities of outdoor spaces increase children's motivation to learn and improve their attainment.

Besides the spatial aspects of learning and its accessibility, the evidence shows that teachers are facing pedagogical, didactic, and methodical challenges in planning and implementing the educational process, and challenges to their digital competence (Lapada et al., 2020). Despite their positive attitude and motivation concerning the transition to remote teaching, teachers may feel hindered by the lack of necessary equipment, resources, and space (Lapada et al., 2020). Technologies that support education are not always developed with the curriculum in mind, and there is little literature exploring the impact of different technologies on children's learning outcomes, classroom engagement, and social inclusion. Previous research suggests a reluctance among teachers to actively adopt technology-based solutions or interventions in their everyday teaching (Ferdig et al., 2020). There is often a lack of training available to teachers to incorporate technology in their pedagogical repertoire. Clearly, there is no 'one-size-fits-all' or 'right' approach to distance learning. Instead, planning and designing of approaches must take into consideration the education system, local solutions, learning environments, and community and home contexts in which learners and educators live.

In low- and middle-Income countries (including Bangladesh), different modalities of education and teacher training are deployed. However, the use of outdoor spaces (in the absence of digital tools or infrastructure) is popular in both the global north and south. For COVID-19, proper ventilation is necessary to reduce the risk of transmission (Bond et al., 2020). Indeed, there is evidence to suggest that time outdoors protects children and educators against virus transmission (Quay Thomas, Sandy et al., 2020). Therefore, during an outbreak, children and educators will be better off if they get outside more often. Children have a right to play outdoors (Bento & Dias, 2017; Bilton, 2010; Kernan & Devine, 2010) and nature offers them rich sensory experiences and materials that support their development (Khan et al., 2020; Spiteri, 2020).

3.0 Summary of workshop format

Prior to the workshop, participants received email invitations including a brief document with background information on the research study, the aims of the workshop, and the agenda (please take note of agenda in the Annex 2). The overall workshop was moderated in Bangla by G M Rakibul Islam from #NextGenEdu, and translation was offered in both English and Bangla (by Al Imran Ovi from a2i, Government of Bangladesh),.

Workshop Format:

Part A: Project introductions and initial findings
The workshop began with a welcome and a series of short presentations from the project team. Professor Zakiul Islam from Bangladesh University of Engineering and Technology welcomed the participants. Dr Thomas Smith (Cardiff University, Project Co-Investigator) provided an overview of the research project. Dr Kusha Anand (Cardiff University, Project Research Associate) presented the key findings from the literature review. Ms Tahrima Hossain (Bangladesh University of Engineering and Technology, Project Coordinator) shared the key findings from the pilot study in Dhaka.

Part B: Participant perspectives on blended learning
In the second part of the workshop, participants were assigned to breakout rooms ensuring that representatives of the different professions (architect, policymaker, teacher, parent, NGO) and organisations were included.

The breakout rooms were based on four themes:
1. Perspectives on school closures and a blended learning approach for reopening schools.
2. Challenges for policymaking and teachers' professional development.
3. Barriers or challenges in teaching and learning during the Covid-19 pandemic.
4. Blended learning frameworks.

Part C: Summary of perspectives and way forward
In the final part of the workshop, facilitators presented the key points discussed in the breakout rooms on the above four themes. The Director General of the National Academy of Primary Education also shared his thoughts. Dr Matluba Khan (Cardiff University, Principal Investigator) shared the way forward from there and how the key learning points from the breakout rooms will inform the ongoing research project.

4.0 Workshop outcome themes: Blended learning in Bangladesh

In this section, we discuss the themes that emerged from the workshop discussions which took place over Part B of the workshop. These themes cut across the different breakout room subtopics, listed above.

The workshop focused on discussing a range of **blended and outdoor learning approaches** that had either been used in the pandemic or might be used to tackle the ongoing pandemic or future crisis. Below we have summarised the range of blended and outdoor learning approaches that teachers and other practitioners and organisations discussed in the workshop. We divide these into 'digital', 'low-tech', and 'outdoor learning' solutions, all of which are discussed in more detail in the sections below. It is notable from these lists that, whilst a range of 'digital' and 'low-tech' solutions were discussed, there was limited specific discussion of a similar range of outdoor learning possibilities, despite the overall enthusiasm for outdoor learning amongst the participants. It should be noted that this is not an exhaustive list of these teaching and learning approaches, instead it serves to represent those discussed at the workshop. Several of these 'solutions' are expanded upon in sections 4.1 to 4.3 below.

Digital Solutions: A range of 'digital' and online solutions to distanced and blended learning were discussed in the workshop. These ranged from nationwide approaches to individual teachers' methods to deliver teaching and learning using digital tools.

- **Centralised Online Educational Resources:** A range of online learning resources have been developed centrally in Bangladesh in response to the pandemic. For example, **A2i** in collaboration with Bangladesh Government's Cabinet and ICT Divisions, and UNDP has developed a large bank of online learning resources available as an e-learning platform 'Muktopaath'. It is possible to develop further resources centrally that can be broadcast through a range of media, as well as centralised pools of resources for teachers and learners.
- **Freely available site-making:** Although a range of free sites are available, teachers in this workshop mentioned that they had been building their own Facebook pages to deliver learning content. For example, one teacher used her Facebook page to deliver classes, and share daily routines with learners.
- **Online meeting tools:** Google Meet, Zoom, WhatsApp, Imo, or other similar tools were used to connect teachers to students and deliver classes. These were commonly used by teachers who had a good device and internet access. Some noted that these tools could connect teachers and students, as well as connecting students to each other.
- **Home learning centres for content creation and learning delivery:** There were examples of teachers creating self-designed learning centres in their own houses, with a range of personal equipment, to deliver online classes. These were of course exceptions, and many teachers did not have the resources to do this.
- **Online training**: A range of methods of online- based teacher training was discussed, from live zoom lessons to instructional videos, to enable them to better make use of digital tools.
- **Equipping classrooms**: It was noted that most schools have poor access to ICT facilities and equipment, such that teachers could not create distance or blended learning resources in their schools or engage learners with ICT in the classroom.

Low-tech Solutions: As outlined in more detail in the discussions below, there was considerable concern that blended learning solutions that relied on 'digital space' were

problematic for the inclusivity of all teachers and learners in Bangladesh, due to lack of access to the internet and suitable digital devices for many. A number of other 'low-tech' solutions were discussed at a range of scales, some focusing on 'tools' (e.g., phones, television, radio) and others focusing on teachers' pedagogic methods (e.g., types of outdoor learning and at-home learning activities).

- **'Phone Schooling':** Many teachers phoned parents/students at home, to deliver homework activities, for example, or to 'follow up' on the work set.
- **Televised lessons:** Sangsad Bangladesh TV which televised parliamentary activity of Bangladesh, has provided televised lessons for students to watch at home. Teachers can direct students to which programmes to watch. However, some noted that some televised learning required a cable connection, which many learners would not have. **a2i**, in partnership with the **Ministry of Education**, have for example broadcasted classes from grades 1-12 and covered primary, secondary, and Madrasa education, as well as vocational subjects.
- **Radio-based education:** Broadcasting lessons and other educational material by radio. **a2i** and **UNESCO** have collaborated on such learning resources.
- **Delivering learning materials to home:** Some teachers had physically delivered tools and materials to their students' homes, along with lesson plans, so they could continue their learning at home with set tasks.
- **Self-direct projects:** Students were given a range of different 'projects' to choose from, which they could then conduct at home with the help of a parent. Examples included life-skills projects, such as designing a family meal, or electronics projects building small robots. One teacher felt these kinds of self-directed projects were more appropriate to at-home learning.

Outdoor Learning Solutions: Whilst most workshop participants were enthusiastic about outdoor learning, there were limited examples discussed of where outdoor learning had been effectively taking place. A range of possibilities were discussed, with a few examples of specific interventions.

- **Outdoor spaces:** A range of outdoor spaces were discussed that could be used for learning, including the street, community spaces, schoolyards, gardens, or fields.
- **Courtyard learning:** Using school courtyard spaces to deliver teaching and drawing on volunteers (e.g., parents) to help deliver classes and learning outside.

We now move on to some of the themes from the workshop that emerged as important for the current pandemic and the future of blended digital and outdoor learning.

4.1 Perspectives on school closures and its impact on children, teachers, and parents

One of the most critical concerns for the workshop was about inequalities associated with blended and distanced learning. The participants were apprehensive about the substantial **widening of disparities or inequalities in access to technology**, and other technology-relevant infrastructure resulting from the closure of educational institutions and the social and economic crisis resulting from the pandemic. **Internet connectivity** issues came to the fore, such as loss of Internet or data during an online class, the inability to upload worksheets, and poor audio or video during an online class which hampered remote learning. Internet access is highly uneven, and rural areas often have no or very poor access (indeed, some rural

areas have poor electricity supply). a2i estimated that 53% of people in Bangladesh do not have internet access. This is likely to remain the reality for the immediate future, so any 'solutions' to provide remote or blended learning must appreciate that rural contexts must still be served even without internet connectivity. Some participants therefore felt that the **focus on digital devices was misplaced** and that instead much more focus should be placed on **home learning and outdoor learning at schools that did not rely on internet delivery**.

The experiences of teachers reflect what is already widely known about the inequalities of access during the pandemic, for example, for one teacher only 11 of her third-grade class, which had an approximate size of 50, had access to smartphones or other internet technologies. For this teacher, she found that even calling those students who did not have internet access at home was problematic. Others estimated that some classes had, optimistically, around 50% of students with access to the internet. One teacher noted that a family might have access to one smartphone between them and that this would normally be the property of the father. If he was out of the house or using the phone, this meant that children and young people could not access it to do online learning. This could be particularly problematic for any lessons delivered 'live'.

Awareness of available resources was also raised as a concern. One participant noted that both parents and teachers were not always aware of the range of resources accessible, citing examples of where they had been unaware that radio learning programmes were available, or online resources (e.g., other than those provided by their teachers).

In terms of teacher digital competence, a teacher participant at the workshop shared that:

> "…*we are using Google meet to connect all the teachers. Not all the teachers took all the initiatives to teach the students.*"

This suggested that teachers themselves had different levels of access to, and willingness to use, technologies that would enable them to work remotely with colleagues and deliver online based and remote learning. Therefore, inequalities of access to technologies were relevant for teachers, as much as they were for learners.

Some participants pointed out that the overwhelming difficulties that **teachers** faced meant that many struggled to find the **motivation** to try and keep up multiple types of blended learning approaches with their learners. For example, some teachers may be trying to teach online for those students that have an internet connection, whilst simultaneously trying to deliver other at-home learning for those students that have no internet access. Some parents felt that teachers did not have the long-term motivation to keep up this duplication of work.

When schools have been closed, the participants reported many **students missed out on social contact** that is essential to learning and personal social development. Teachers who participated in this workshop reported a complete absence of interaction with students and their parents in some cases. They felt strongly that some level of engagement and interaction between children, and between learners and teachers, is crucial. Parents shared that they were concerned about the increase in their children's internet use, and in particular the mental health of adolescent young people who relied on social contact with peers.

Teacher participants in the workshops suggested that **parental and sibling engagement and support** can help them achieve learning outcomes using simple pedagogical methods. However, some parents at the workshop shared that they are struggling to perform the task

of facilitating the learning of their children at home. This is even more difficult for parents who themselves have had limited education and have limited resources to facilitate education at home. Most agreed that **school closures are likely to have exacerbated inequalities during the pandemic.** Participants spoke of their concern that children from high-income families are likely to have resources available for continuing to learn at home, as well as educated and involved parents who are less likely to be impacted by income loss when compared to children from socially disadvantaged families. In a practical sense, if parents are being relied upon to assist their children's learning, then parents being away from home (e.g., for work) for long periods of time (e.g., working hours) would mean that home-learning would be difficult for many children.

A wider-scale concern was the **extent to which children will return to school once the worst of the pandemic is over.** One NGO participant highlighted that whilst school attendance at primary and secondary levels had improved over the last decade in Bangladesh, there was a significant risk that many may not return, particularly the most vulnerable and marginalised. They were also concerned about the compounding loss of learning over time, with many children unable to 'catch up' on what they would have missed in school.

4.2 Barriers and challenges for teachers' professional development

Workshop participants felt strongly that **teachers need access to relevant, quality professional development and support** to be able to continue teaching in crisis contexts. While schools remain closed, what professional development and support are available is being delivered through distance learning. The participants spoke about the **digital divide for teachers themselves**, in terms of access, usage, and skills. They are aware that excessive reliance on online learning tools to ensure the continuity of education risks exacerbating inequalities between teachers. Effectively, access to digital devices and internet connectivity was as much a problem for teachers as it was for learners.

For parents, teachers, and students, **knowing how to use digital tools** (e.g., online-based learning; social media platforms; communication tools) **or devices** (e.g., smartphones; laptops; desktop computers) is significant. The accessibility to these tools involves both a **practical component** (having the device, connectivity, and enough data purchased), about how and where teachers can access them, including their cost, availability, and suitability to the task; and a **skills component**, including how well teachers are trained to develop lessons, other educational content, and how they can learn to communicate through various digital platforms in a range of ways with their students. Therefore, the **low levels of professional development (in terms of preparation and training) of teachers in distance education is an issue of concern**, which leads to a **low level of motivation and agency** among teachers. In other words, even though many teachers may have access to smartphones, laptops, and the internet, they are not skilled in using these tools to deliver learning online or in a blended learning fashion. The aspect of materiality/space as to where this online teaching would happen (space at individual teacher's home to conduct online classes) was not raised or discussed.

In terms of what training teachers do receive, this can differ, but it appears that many obtain around 12-days training in ICT as part of their training course, but this does not include taking

online classes. They learn basic digital skills, such as starting and using devices such as a laptop and basic software packages.

Teachers at the workshop shared that when schools closed unexpectedly, they were unsure of their responsibilities and how to support learning. **Transitions to online learning platforms were messy** and led to a low level of efficacy and motivation among teachers. A teacher shared her experience of using digital tools:

> *"Digital reach is really low, only phone number is available. Initially, the intention was to make sure that there is a communication with the students. During that time, as the communication was not there, a huge gap has appeared. When we were introduced with the technology, survival became important. The teachers had to figure out how to use the tech and then they were very scared. They had to learn how to teach online. Radio was even more difficult. In the physical classes, the teachers can use their body language."*

Another participant echoed a similar issue, he said:

> *"Teacher's lack of curiosity in village/upazilas is a problem. More than 600 teachers out of 700 have smart phones but they don't know how to utilize it."*

In terms of training opportunities, another teacher shared his experience:

> "*Six to seven subject-based trainings were conducted online… Hands-on activities were not delivered properly, and it was difficult to attract and hold your attention on the training."*

When workshop facilitators asked for recommendations, participants suggested:

> *"Teachers need mindset shift and incentives"*

> *"Challenges are quite different in rural areas than urban areas; therefore, we should have different strategies in rural areas on teacher's capacity building."*

The participants also recommended there should be professional development training programmes to train teachers on how to utilise **outdoor spaces**. They suggested that such a programme could include building understanding of a range of outdoor teaching methodologies.

A teacher commented:

> *"The Bangladesh citizens usually are not having to attend those activities [outdoor teaching]. So we need to identify some effective activities that are needed for effective outdoor teaching…"*

There were also **positive examples** of schools being proactive and quickly **delivering teacher training in response to school closures**. One school was able to arrange frequent meetings between ICT teachers and other teachers with less knowledge, and these frequent meetings allowed teachers to support each other and solve problems through discussions. They also made use of online tutorials, and ICT teachers made video tutorials to share with others.

Several respondents were also positive about the **potential for online and blended learning for future teacher training and professional development**. Many felt that blended learning resources should continue to be developed so that teachers and students can continue learning in this way. Particularly for teachers, several noted that blended learning resources offered much potential to reach teachers who might otherwise not be able to easily access further training and skills development (e.g., due to remote locations), although it was also noted that it was often these factors which also meant that such teachers did not, at present, have good access to the internet.

Overall, there was considerable concern for the **lack of training for teachers** to use digital tools to conduct distance learning, with **significant inequalities** noted between teachers in different economic, personal, and locational circumstances. Participants also noted that **teachers lacked training and professional development opportunities for outdoor learning.** This is a significant finding as research to date has focused on disparities of access to digital learning tools for learners (Uddin, 2020; Wadud, 2020). Workshop participants demonstrated that considerable work needs to be done to better **understand the diverse needs of teachers to undertake teaching at a distance**, with particular emphasis on digital tools or other distance learning options where the use of digital technologies is not possible.

4.3 Towards a blended learning framework

In this section, we consider how participants' discussions might contribute to the development of a 'blended learning framework'. By this, we mean the different ways in which technologies and outside spaces can be used to contribute to home learning for children, particularly in a time of crisis. The discussions included examining the range of approaches used by teachers and learners in the present context, many of which are listed above in section 4.0. In this section, we focus on some of the more detailed examples, concerns, and promising paths.

4.3.1 Concerns around screen time and quality of outside space

Although participants in the workshop recognised the importance of blended learning both in the Covid-19 pandemic and for potential future 'crisis', they also expressed concern about **the impact of over-use of technologies** and the **unsuitability of certain outside spaces.** For example, they discussed the adverse impact that screens and 'screen time' can have on children and youth. Indeed, **some commented that 'screen time' can negatively impact children's health and education.**

A teacher and parent shared her worries about the screen time while lockdown in Dhaka, she said:

> *"I used to teach primary school and also pre-primary. [My daughters school] was closed for a week with the first lockdown and then we've had two weeks of holiday… I'm very reluctant to have my little ones in front of the screen. Having seen kids in front of screens and having seen how quickly they love a screen. I really have some tight limits on screen time, because I have the privilege to do so essentially as well. But I am also a member of the Nordic Club, which is kind of an Outdoor Recreation Club in Dhaka, and I used to be on the board, so I've built the playground since I've come and I put*

> *reading into the kid's rooms. I'm super involved. And so, when school closes, I also started an outside school for the kids who were in front of the school, so they didn't need to be on the computers."*

This participant therefore was wary of 'screen time', and proactive in terms of making use of outside space for learning, as well as limiting screen time, but acknowledged that she was in a privileged position to do so. Participants recognised that, **in Dhaka, many are much less privileged in terms of access to quality outdoor space**, or indeed **access to books** for their children to learn through alternative means, although they may share concerns about 'screen time' for their children.

Several teachers who participated in the workshop also noted the **attention span of children** whilst doing learning online. One teacher, for example, pointed out that trying to keep students engaged for one to two hours during an online class could be very challenging.

The **quality of the available outdoor environment** was also a concern raised in the workshop. Some participants reported challenges of getting outside to do learning in the context of Dhaka. For example:

> *"This weather is pretty hot, especially last week. So, one of the things that I think is important also from an architecture side is how does your environment, both enable and hinder learning, even when you're outside … Starting last week, I was thinking about how we use water to both enable kids to cool themselves off and kind of engage in play-based learning, but also to understand and learn new things."*

The heat and humidity in Dhaka may itself prevent children and their parents from making use of outside spaces for learning (and indeed for play and other activities). However, participants also expressed concerns regarding the **lack of infrastructure of schools, the quality of classrooms, and the class size when schools reopen**.

We can summarise that although many participants identified positive aspects of blended learning which incorporated a digital component, and the potential of outdoor spaces for teaching, they also noted significant concerns with both 'spaces' for children.

4.3.2 Technologies and blended learning: Low-tech and high-tech

The participants expressed **concern about high-tech solutions** as the appropriate method to ensure continuity of education. This was in part due to the **significant lack of access** for teachers and pupils to 'high-tech' solutions in Bangladesh, both in terms of hardware (e.g. smartphones, laptop computers), but also to good quality internet. However, they largely agreed that it is necessary to consider using a mixture of high-tech and low-tech solutions, depending on their availability and accessibility.

Participants noted a number of 'challenges' with high-tech solutions (largely relying on digital tools and internet access), as well as discussing 'alternative' solutions that relied less heavily on digital technologies. Some of these 'solutions' are listed above in section 4.0, and below we concentrate of some of the detail from the discussions around these.

Challenges with high-tech solutions:

A wide variety of online learning materials are available and produced for the Bangladesh education system at a range of levels and scales. A number of problems were noted with online, high-tech based solutions throughout the workshop:

- **Access to the internet and digital devices**: For students, teachers, and parents.
- **Teacher skills** in using online resources and digital tools. These included not only basic skills (e.g., knowing *how* to use particular devices or digital online resources/tools) but also 'soft skills' of online delivery, which is different from the classroom environment.
- **Quality of delivery:** Related to the above, even if access is good, teachers may not be well-trained in delivering quality online and blended learning, which is different from classroom-based lessons.
- **Knowledge and awareness** of the availability of online resources e.g., where to find them, how to access and share them.
- **Interactivity:** a large bank of online educational resources is available through Government led initiative 'Muktopath'. However, the majority of these resources and initiatives are passive, or not interactive, in the sense that learning outcomes cannot be checked. For example, pre-recorded lessons delivered either online or through the television or radio would be considered 'passive' as they do not involve direct interaction between the learners and the teacher.
- **Student/learner concentration:** Many teachers and educators mentioned this as an important factor, particularly for younger children. Many found it difficult to concentrate on the computer screen for long periods of time.
- **Assessment:** Many education resources (including digital tools, but also more low-tech solutions such as broadcast lessons) struggle to assess learners' progress in the ways that teachers are able to do in the classroom, both formally and informally. For example, one teacher said they had delivered classes via zoom, but that assessment exams still had to be conducted in person. In this case, they estimated that 20-25% of students had not been able to access the online lessons, but still came to sit for the exam, putting them at a significant disadvantage.

Alternatives to high-tech solutions:

As an alternative to high-tech driven learning, a practitioner at the workshop commented that **simple technology and printed materials** (such as **worksheets**) can have a positive impact on learning. In addition, a few participants recommended outdoor learning as part of a suite of 'low-tech' solutions, a participant elaborated:

> "*Outdoor learning and space might be one possible approach. Possibilities to telecast lessons centrally - rather than local teachers - broadcasting or delivering lectures over the internet - students could do this outside, in the field or courtyard, to help cover the loss made in the pandemic.*"

A teacher shared his experiences of using digital tools and outside space together:

> "*.. Internet wasn't working, so we tried all the possibilities. I took Zoom outside to teach and Internet was working.*"

Therefore, making use of outside space to deliver online-based education may be as much of a **practical choice** as one which is driven by pedagogic concerns. Importantly, though, many participants expressed a desire that **future blended learning must take account of the need for low-tech solutions to learning at home,** as well as trying to bring digital technologies and the use of outside space together.

4.3.3 Enthusiasm for, and examples of, outdoor and blended learning

Many participants were enthusiastic about the possibility of blended learning if it involves children, parents, and teachers in outdoor spaces. Several participants shared examples of **where outdoor spaces have already been used in the pandemic** or gave examples of how they might be used from their own experiences. A practitioner (working for Save the Children) shared how they have used a blended learning approach with children from rural areas in Bangladesh, she said:

> "*It is difficult for us to ensure all children's access to the devices; therefore, a blended learning approach can be helpful. Phone follow-ups was not very useful, therefore in 120 schools there is online teaching happening, after analysing the curriculum content. Courtyard learning was also started by the teachers. After doing the survey about the need and access of the students, courtyards were developed.*"

As a response to the pandemic, Save the Children had set up courtyard learning sessions for primary school children who do not have access to television (and therefore televised learning at home). This practitioner later further explained '**courtyard learning**':

> "*There is one teacher per five-six groups, and the teachers would go to at least two schools in order to provide support for the students. It involves the parents as the teaching assistant, though this part of the initiative was not very effective. The parents do not have very strong education background.*"

'Courtyard learning' provided one example of how organisations have attempted outdoor, blended learning, with varying degrees of success. Highlighted here was the attempt to involve parents as teaching assistants, but with limited success given the lack of educational background that the parents had. However, this example does demonstrate how **outdoor learning is possible for children from less privileged backgrounds**, particularly with teachers working between multiple schools.

Ideas for how blended learning could take place also came from other participants. One participant explained how outdoor learning could be implemented using a small-group approach. He said that:

> "*We can make small groups, so that the teacher can engage more, and we can make a number of learning stations which can last around one hour, and if there are 30 students, we can make six groups. We only have the school infrastructure facility, but we can use the local environment or the fields.*"

It was striking from the workshop that whilst there was much enthusiasm for blended learning approaches that included the use of outdoor spaces, there were **limited examples presented of where outdoor space had been used** during the pandemic. As noted above, some participants were concerned that many children did not have suitable access to **quality**

outdoor space, particularly in dense urban contexts, whilst teachers were **not trained in the use of outside space for teaching**. This suggests that significant research and experimentation is needed for teachers, learners, and parents to make better use of outdoor spaces for teaching and learning, both in response to the pandemic and for the pedagogic and wider wellbeing benefits that are well recognised from studies of children's use of outdoor environments (Khan et al. 2019; 2020).

4.3.4 Context-appropriate blended learning tools and wider educational concerns

The participants felt that if the curriculum was redesigned to accommodate blended learning, it must be based on the **local contexts and contextual backgrounds**. Much of the discussion focused on the broad differences between urban and rural areas in Bangladesh. A practitioner participant said:

> *"Blended learning will be different for rural and urban areas. As most students are not being connected online [in rural areas] we have to do the core learning offline. Teaching and learning in rural and urban area will be different."*

This implies that the key priority should be to **improve and augment the curriculum based on the local context** (e.g., the character of the district). Any blended learning activities introduced to the curriculum should allow **flexibility** for teachers and other stakeholders to adopt the use of these curriculum tools, and spaces (e.g., outdoor, indoor, and digital), within their own context. They should be adaptable to diverse and rapidly changing teaching conditions and learning modalities.

One teacher participant noted that rural areas tended to have lower cases of Covid-19 compared to urban centres, and therefore might be more appropriate to trial or start outdoor learning.

But some participants questioned to what extent blended learning, particularly that which depended on digital technologies, was appropriate for primary-school-aged children. For example, one participant said that he felt that such blended learning is more appropriate for tertiary-level students (e.g., at university), saying that:

> *"…as primary school students are dependent on others it is not that much appropriate for them."*

The degree to which blended, digital and outdoor learning was 'appropriate' to the context was therefore a key concern – whether that context be the educational level (primary, secondary, tertiary), or the spatial context (urban and rural).

Links to wider educational concerns:

Concerns were raised about the need for **wider educational reform** in Bangladesh, which went beyond issues of blended and outdoor learning in response to the pandemic but were closely connected to many of the problems experienced during the pandemic.

One of these was related to **assessment**. Some respondents felt that there was a need to reform the current assessment system in Bangladesh. They argued that learning from the

pandemic, such as the use of technologies to enhance learning, might offer ways **to address pre-pandemic problems such as assessment of pupils**, and **delivering teacher training.**

A second concern was that **the curriculum**, as it stands, does not in itself **clearly support the use of blended learning materials**. This compounds the current problem for teachers, who are trying to adapt classroom-ready materials into quite different formats to either deliver online, or through some other distance learning mechanism (e.g., home worksheets and task, communication over the phone, and so on).

5.0 Recommendations

In this final section, we provide two sets of recommendations that emerged from the workshop discussions: firstly, for policy and policymakers, and secondly, for future research which will be needed to better establish the place of blended and outdoor learning approaches in the education system in Bangladesh.

5.1 Recommendations for policy and policymakers

This workshop involved a wide range of relevant stakeholders across the education sector, from policymakers to classroom teachers and parents. Based on these discussions, summarised above, the workshop takes forward a number of recommendations, which should be underpinned by further research and discussion:

a) **Blended learning design should be appropriate to the context:** The planning and designing of teaching approaches must take into consideration the education system, learning environments, and community and home contexts in which students and teachers live. Within Bangladesh, there are significant contextual differences and inequalities among teachers and learners.

b) **Centrally generated resources must be carefully mapped onto teacher and learner skills:** What ministries and education authorities can develop and manage must be analysed alongside what teachers can and know how to teach, and what students have access to in their homes and communities.

c) **Blended learning content should be inclusive:** Any future blended learning content must be designed to be responsive to learners from different socio-economic status, gender, ethnic and language, geographical (rural/urban) backgrounds, as well as inclusive of learners with special needs.

d) **Teacher training in digital and outdoor pedagogies should be prioritised:** This crisis has highlighted both initial and ongoing teacher education need significant reform, allowing teachers to develop learner-centred practices through digital and outdoor teaching approaches.

e) **Support is needed for learner's and teacher's wellbeing:** The wellbeing of teachers and students must be considered by ministries and education authorities in planning for and designing distance learning and fostered in learning institutions and the home and community environment. It is important to support their wellbeing, social-emotional competencies, and resilience before, during, and after a crisis.

f) **Flexibility is needed in the curriculum:** A less rigid curriculum, and flexible teaching practices and assessment systems are pertinent to move with the rapidly changing times. The pandemic has highlighted the need for flexibility to make resources and learning context-specific, and to give teachers the necessary flexibility to adapt to their student's needs and the impact of the crisis on their students.

g) **Outdoor and home learning spaces should be identified, studied, and integrated into learning where possible:** Learning opportunities in and around home, the

neighbourhood, and the community need to be strengthened. There is much potential for considering how students learn at home, and how learners and teachers might better utilise outdoor spaces in a range of contexts, but these are currently poorly understood.

h) **Stakeholders should be consulted to better adapt to the current and future crisis:** Education and training institutions need to collaborate and consult with stakeholders for a successful learning society. These stakeholders include parents, headteachers, teachers, NGOs, and other agencies.

i) **The range of educational content developed, and delivery mechanisms used, must reach all learners and teachers:** The Government of Bangladesh has taken the right initiative in utilising multi-modal remote learning delivery, including television, radio, online, and phone-based teaching. It will be crucial to ensure effective measures are adopted to reach all school-aged children. It will be important to make all four platforms functional through content development and delivery to reach as many students as possible.

5.2 Recommendations for future research

Recommendations from stakeholders for future research priorities included:

a) **Blended learning in primary school settings:** There is a lack of research on blended learning in primary school settings, including the use of digital tools and outdoor spaces, and how the two might be brought together in a range of contexts. This will be the focus of some of our future research on this project and in seeking further research funding.

b) **Reliable data on teachers' needs and capacities and gaps in education are significant to effective crisis response**: Existing data on teachers, particularly their existing skills and needs, are fragmented and unreliable, or simply not available, making the development of effective crisis response strategies and resources difficult. Our research aims at understanding the needs of teachers and other stakeholders, and gaps in education provision, for both teachers in terms of professional development, and for learners in primary schools. Such an understanding would be useful to inform the ongoing response to crisis and future education development strategies.

c) **There is lack of research on teachers' perspectives of blended learning.** Teachers need support to design and implement blended learning, both in terms of the digital environment and for taking learning outdoors. The evidence from our research will help formulate guidance and clarify the guidance and key implementation elements to guide blended learning practice.

Acknowledgements

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Annex 1: List of organisations and/or professions represented at the workshop

Participants' background	Number of participants
Urban planner	3
Architect	6
Expert in education (Researchers)	21
Teacher	14
Policymaker/ DPE	2
Parents	2
NGOs	6

Annex 2: Workshop Agenda

Time	Agenda
3.30-4.00pm Bangladesh Time	Workshop Welcome and Introduction of GCRF Crisis-led approaches to teaching and learning in Bangladesh: **Dr Matluba Khan** and **Dr Thomas Smith (Cardiff University)** and **Professor M Zakiul Islam (Bangladesh University of Engineering and Technology [BUET])**
Session 1 4.00- 4.10pm Bangladesh Time	Presentation of key findings from the scoping review and pilot study: **Dr Kusha Anand (Cardiff University) and Ms. Tahrima Hossain (BUET)**
Session 2 4.10-4.40pm Bangladesh Time	**Roundtable Discussion in Bangla (Break-out Rooms)** - Perspectives on school closures, and a blended approach for reopening schools - Challenges for policymaking, and teachers' professional development - Barriers or challenges in teaching and learning during the Covid-19 pandemic - Discussion on blended (digital+outdoor) learning frameworks
4.40-4.50pm Bangladesh Time	Facilitators present the key points in English in the main room in English (share notes)
4.50-4.55pm Bangladesh Time	Remarks from the **Chief Guest**: **Md. Shah Alam**, DG, National Academy for Primary Education (NAPE), Mymensingh
4.55-5.00pm Bangladesh Time	**Final remarks** and way forward: Dr Matluba Khan