



A COMMON SOCIAL MEDIA PLATFORM GIVING PRIMARY SCHOOL TEACHERS IN BANGLADESH ACCESS TO ICT-BASED LEARNING MATERIALS AND MENTORSHIP

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ABOUT THE LEARNING CYCLE ON TEACHER PROFESSIONAL DEVELOPMENT AT SCALE (TPD@SCALE)

This case study is a result of the KIX EMAP Learning Cycle "Teacher Professional Development at Scale (TPD@Scale)". Facilitated by the TPD@Scale Coalition for the Global South, through the Foundation for Information Technology Education and Development, Inc. (FIT-ED), this course ran from 23 September until 16 December 2022. Across 11 weeks, this Learning Cycle enabled participants to examine how Information and Communication Technologies (ICT)-mediated Teacher Professional Development (TPD) programmes can be scaled through adaptation/localization for a large number of teachers to improve students' learning outcomes. 13 national teams took part in this Learning Cycle: Bangladesh, Bhutan, Georgia, Kyrgyz Republic, Maldives, Moldova, Mongolia, Nepal, Sudan, Tajikistan, Uzbekistan, Vietnam and Yemen.



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LIST OF ACRONYMS AND ABBREVIATIONS

A2I	Access to Information
AUEO	Assistant Upazila Education Officer
BEd	Bachelor of Education
BOU	Bangladesh Open University
C-in-Ed	Certificate in Education
DPed	Diploma in Primary Education
DSHE	Directorate of Secondary and Higher Education
GPE KIX	Global Partnership for Education Knowledge Innovation Exchange
HSTTI	Higher Secondary Teachers' Training Institute
ICT	Information and Communication Technology
LC5	Learning Cycle 5
MEd	Master of education
MOPME	Ministry of Primary and Mass Education
NAEM	National Academy for Educational Management
OECD	Organisation for Economic Co-operation and Development
PEDPQI	Primary Education Development Project for Quality Improvement
PTI	Primary Teachers' Training Institute
SAIST	South Asian Institute for Social Transformation
SMS	Short message system
TPD	Teacher professional development
TTC	Teacher training college
UNICEF	United Nations International Children's Emergency Fund
URC	Upazila Resource Centre

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EXECUTIVE SUMMARY

In October/November 2022, our team joined the KIX EAP Learning Cycle on Teacher Professional Development (TPD) at Scale (TPD@SCALE), offered in partnership with the TPD@Scale Coalition for the Global South through the Foundation for Information Technology Education and Development Inc. (FIT-ED), to examine how information and communication technology (ICT)-mediated TPD programmes can be scaled up for a large number of teachers through adaptation/localisation to improve students' learning outcomes. The Bangladesh team developed a knowledge product that includes (a) a policy brief for a teacher education and TPD practice that addresses existing challenges in TPD and (b) a TPD scaling proposal for the country.

Part 1. Policy Brief

ICT integration at the primary level is seen as a strategic resource due to its ability to facilitate learning among students at a very early stage of schooling; it is one of the Bangladeshi government's top priorities in the National Education Policy 2010. A number of field reports, however, have identified a digital divide between schools in urban and rural areas. For instance, Bangladesh's government has a policy to provide a laptop to students and teachers in every basic school, but many teachers do not take advantage of this resource due to a lack of technological understanding and training. Additionally, technological integration is missing in teaching and learning for both teachers and students, with even teachers struggling to operate laptops or computers. Thus, both resources and training are needed to scale up ICT integration in rural schools. Consequently, we mainly explored the challenges to TPD, including inaccessible materials and inadequate mentoring, monitoring, ICT training, contextualisation, adoption, follow-up training and hands-on experience in training sessions.

Because technology continually evolves, ICT-integrated TPD training should be prioritised and expanded. To ensure integrated teaching and learning, a number of strategies were proposed. This proposed scale-up intends to provide resources to all primary school teachers in Bangladesh's rural areas, especially in the most remote regions, where access to resources is limited. Two proposals are offered for an ICT-integrated TPD that addresses the digital divide between urban and rural schools. First, teachers will receive short videos

about ICT integration on their smartphones. Most teachers use smartphones, so educational videos can be sent conveniently. Second, multimedia classrooms will be established in primary schools. The Ministry of ICT and Ministry of Education will work jointly to mobilise resources and ensure TPD. Other related stakeholders and donor organisations may also be involved to make the programme a success.

Part 2. Scaling Proposal

The Bangladeshi team has introduced a scaling proposal that aims to scale up the integration of ICT-based learning by providing mentorship and easy access to materials through a common social media platform for primary school teachers, concentrating on rural areas to close the digital divide. The proposal includes five main phases. The first phase will focus on a needs assessment of teachers based on a baseline survey. The second phase will analyse the findings of the needs assessment and prepare training materials based on the findings. The third phase will develop the training materials and pilot them online. Teachers will be trained on using digital devices, easily accessing important links and implementing learnings in the classroom. Phase four will analyse the pilot data and conduct an evaluative study. Based on the findings, the final phase will scale up the existing interventions, after which the project will be implemented nationwide.

PART 1

POLICY BRIEF

Context and Background

The education system of Bangladesh embraces primary, secondary, tertiary, technical and vocational education. The country also has an alternative education system comprising English-medium schools, madrasa education and refugee education. The constitution mandates that children between the ages of six and 10 pay nothing, and even private schools and universities receive substantial subsidies. Local education is governed by a hierarchy of school boards, which further complicates matters. Between the ages of six and 10, the first phase of fully free primary school lasts for five years, and the average age of entry into junior secondary school is 11. This is a crucial time in student's lives, as they must confirm an educational decision that could have an irrevocable impact on their future. Some of the specialisations available to students who decide to finish the final two of their 10 school years in general secondary schools include the humanities, science and business. They are then eligible to take a secondary school certificate examination that is overseen by no less than seven school boards. They can also decide to take the madrasa religious education route, which leads to a different set of exams with a similar level of difficulty. Other students transfer to technical or vocational training facilities run respectively by the Ministry of Labour and Employment and the Ministry of Education. Here, candidates choose between a lengthier professional certification and a more condensed, job-specific orientation.

Three distinct educational pathways are currently available: general education, madrasa (religious education) and technical/vocational education. Each track requires students to complete preschool, elementary and secondary education as well as college in some cases. Religious education is common even among families that are not particularly religious, because students typically attend the most accessible school, and ideology does not play as strong a role in school selection as it does in some other countries. Figure 1 illustrates the structure of the education system in Bangladesh.

Teacher Education

Bangladeshi primary school teachers undertake a regular, 1.5-year pre-service training programme called the diploma in primary education (DPed), but pre-service teachers are required to enrol in the programme no later than three years after being hired as teachers due to the training centres' massive training demands to accommodate a large teacher population. Teachers of grades 5 to 8 must complete a BEd offered by teacher training colleges (TTCs) through the National University and other public and private universities.

Upon entering the job field, all teachers receive a 15-day induction training on general subjects and pedagogical techniques. Usually, these trainings are held at the sub-district level. Beyond this, new head teachers also receive 21 days of leadership training on running their institutions efficiently. Government policy also provides for ICT and subject-specific trainings.

As part of the continuing professional development of teachers, sub-cluster training is provided by Assistant Upazila Education Officers (AUEOs) and Primary Teachers' Training Institute (PTI) instructors along with the spontaneous participation of teachers in each sub-cluster once every two months by rotation.

TPD Practice

ICT-based trainings are allocated to primary schools but rarely take place. One ICT training is usually organised every two to three years, but even that depends on donor organisation funding. Furthermore, no more than two teachers from each school receive the ICT training.

There are 14 government training colleges and a National Academy for Educational Management (NAEM) for secondary school teachers. For madrasa teachers, there is only one training centre. The subject-based training of higher secondary college teachers is provided by five higher secondary teacher training institutes (HSTTIs). All 14 government training institutions offer BEd courses, and several also offer MEd programmes in addition to training. These programmes are also provided through the educational and research facilities

Figure 1. Education system framework in Bangladesh

General Education		Madrassa Education																
Age	Grade																	
26+		PhD	Post MBBS Diploma	PhD (Engr)	PhD (Medical)	PhD (Education)												
25+	XX																	
24+	XIX																	
23+	XVIII																	
22+	XVII	MA/Msc/MCom/Mss/MBA	LM	MSc (Engr)	MSc (Agr)	MBA	MED & MA (Edn)	MFA	MA (Lsc)									
21+	XVI	BACHELOR (HONS.)	MASTERS (Prel)	BSc (Engr) BSc (Agr) BSc (Text) BSc (Leath)	BSc (Engr)	BSc (TechEd)	BED & DPED	BP (Ed)	Dip. (Lsc)	KAMIL								
20+	XV																	
19+	XIV																	
18+	XIII																	
17+	XII	SECONDARY	HIGHER SECONDARY EDUCATION HSC Examination	DIPLOMA (Engineering)	BBA	HSC in Voc	C in Edu	C in Agr	Pre-Degree BFA	Diploma in Comm	Diploma in Nursing	ALIM						
16+	XI																	
15+	X	SECONDARY EDUCATION SSC Examination		TRADE Certificate		ARTISAN COURSES		DAKHIL										
14+	IX																	
13+	VIII																	
12+	VII																	
11+	VI																	
10+	V																	
9+	IV																	
8+	III																	
7+	II																	
6+	I																	
5+																		
4+																		
3+																		

Source: Bangladesh Bureau of Educational Information and Statistics, 2022

of the universities of Khulna, Rajshahi and Dhaka. Additionally, Bangladesh Open University (BOU) provides distance learning BEd programmes (Ministry of Education, Bangladesh, n.d.).

There is evidence that primary school teachers in Bangladesh would like help from their peers in planning lessons, creating content, observing classrooms and giving corrective feedback. Time restrictions and the social structure of the schools, however, limit teachers' use of such embedded improvement initiatives (Rahman et al., 2018).

In accordance with the National Education Policy of 2010, government primary schools have evolved to adopt inclusive education, but they have encountered numerous difficulties in doing so due to the poor quality of instruction provided to students with special needs. In Bangladeshi schools, peer support and teacher collaboration are notably absent (Cross et al. 2022).

Existing Challenges in TPD

A review of previous studies and interviews with five high school and five primary school teachers in Dhaka and Chattogram, Bangladesh, identified several challenges that erect barriers to TPD in Bangladesh (Hoque et al., 2010; Khan, 2014; Singh et al., 2021).

1. **Lack of sufficient training on ICT:** The PTIs provide ICT-based training as a part of TPD programmes, but a gap persists in implementing the learning in classrooms.
2. **Lack of monitoring:** A key challenge in existing TPDs is that the government of Bangladesh has no dedicated monitoring framework to follow up on TPD outcomes at the school level.
3. **Lack of mentoring:** A lack of trained, motivated teachers also inhibits the implementation of ICT-based learning at the primary level; teachers rarely receive proper guidance to put their training into practice.
4. **Inaccessible materials:** Due to problems in distributing necessary resources to schools, schools often lag in this regard.
5. **Lack of contextualisation and adoption:** Contextualising ICTs into the curriculum remains in its infancy in Bangladesh, although attempts have been made to accelerate its progress. The needs for student learning cannot be met by simply adopting new or innovative technologies. It is not easy to shift traditional pedagogical practices towards pedagogical ICT integration.
6. **Lack of follow-up training:** TPD programmes often end quickly before proper learning outcomes are achieved. Follow-up training is essential to ensure better learning outcomes.
7. **Lack of hands-on experience in training sessions:** Training sessions often comprise only lectures and presentations. A hands-on training approach is mostly missing in TPD.

Proposed Solution

Because technology is evolving daily, ICT-integrated TPD training should be prioritised and expanded. The following strategies could facilitate integrated teaching and learning:

1. Half-yearly ICT-based training should be provided to all teachers in schools. This will sustainably advance the digitisation of education.
2. The implementation of training, an online survey, pre- and post-training evaluations, monitoring and recording can also ensure the effective implementation of online TPD. The assessment should be conducted monthly for at least a six-month period. Follow-up training after six months is also required to refresh and upgrade the learning.
3. A great shortcoming after trainings is a subsequent failure to contextualise and localise the learning in classrooms. To address this in the trainings, the trainers should briefly show the teachers how to apply what they have learned in the actual classroom scenario.
4. To accelerate contextualisation, hands-on experience must also be provided. Teachers can practically demonstrate in the training sessions how they will eventually conduct their classes following the training lessons.
5. The resources used in training must be accessible to teachers in both rural and urban areas, which will require the coordination of the involved stakeholders.
6. To enable teachers to better follow the training, the training materials should be made accessible to all teachers on a common platform that will allow them to review the material at a time suitable to them. This can be ensured by establishing a common platform (i.e. website) for teachers.

Prioritised Areas: ICT for Scaling Up

This proposed scale-up intends to provide resources to all primary school teachers in Bangladesh's rural areas, especially in the nation's most remote regions, where access to resources is limited. A number of field reports have identified a digital divide between schools in urban and rural areas. Schools in urban areas are more likely to have the technology needed for education, and technological integration is possible because of the presence of trained teachers with access to technology and resources. By contrast, it is difficult for schools in remote locations to provide all these resources to students, and they offer only rudimentary support. For instance, the government of Bangladesh has a policy to provide a laptop to students and teachers in every basic school, but teachers often fail to use this resource because of a lack of technological understanding and training. Additionally, technological integration is missing in teaching and learning, with teachers struggling to operate laptops or computers. Consequently both resources and

trainings are needed to scale up ICT integration in rural schools.

We propose two elements in the design of an ICT-integrated TPD that addresses the digital divide between urban and rural schools:

- 1. Teachers receive short videos on ICT integration on their smartphones.** Because most teachers use smartphones with applications such as WhatsApp, Messenger, Viber and Imo, educational videos can be sent conveniently.
- 2. Multimedia classrooms can be established in primary schools.** This will demand cooperation and coordination between and among stakeholders. The Ministry of ICT and Ministry of Education could work jointly to mobilise resources and ensure TPD. Other related stakeholders and donor organisations may also be involved to make the programme a success.

ICT integration at the primary level will facilitate learning among students at a very early stage of school, so ICT is one of the government's top priorities in the National Education Policy 2010. The relevant stakeholders in this matter must determine the top priorities for their efforts. ICT integration will support the ICT-based education process by reaching many students and teachers. It will also lessen the disparity in pay between teachers in urban and rural areas.

PART 2

SCALING PROPOSAL

Background

Bangladesh's education system of embraces primary, secondary, tertiary, technical and vocational education. An alternative education system comprises English-medium schools, madrasa education and refugee education.

For primary education, 54 government PTIs provide pre-service teacher education to primary school teachers. They offer both a one-year Certificate in Education (C-in-E) course and a new, 18-month DPED in collaboration with the Institute of Education and Research at Dhaka University, which handles the quality and monitoring of the programme. At the upazila level, upazila resource centres (URCs) organise subject-based training for primary school teachers. The URCs operate under the Directorate of Primary Education and are located on the campus of the upazila's model school. Of the 481 proposed URCs, 174 are now initially functioning (146 under the IDEAL Project launched in 1996 by the United Nations International Children's Emergency Fund [UNICEF] and the government and 28 under the Norway-supported Primary Education Development Project for Quality Improvement [PEDPQI]). The PTIs operate under the Ministry of Primary and Mass Education (MOPME). The general administration is under the Directorate of Primary Education, while the academic aspects are overseen by the National Academy for Primary Education. The Academy formulated the new DPED curriculum and monitors and supervises PTIs along with the Institute of Educational Research at Dhaka University; the Academy also conducts examinations and publishes results. The PTIs and URCs are the training providers for primary teachers. These institutions are monitored by field-level officers and the National Academy for Primary Education.

The TTCs provide professional pre-service and in-service education and training for secondary teachers. These include BOU, the HSTTIs, technical TTCs, Bangladesh Madrasa Teachers' Training Institute, the Institutes of Education and Research at the University of Dhaka and the University of Rajshahi, the Institute of Education, Research and Training at the University of Chittagong and departments or faculties of education in about a dozen private universities. There are 18 government TTCs (including four colleges of physical education) and

104 non-government TTCs (including a TTC for physical education) to provide pre-service and in-service teacher education. Two private universities also offer BEd programmes. The usual duration of the BEd course is about one year, but the BEd course at BOU lasts two years, as it is provided through distance education. BOU uses modular self-learning text materials, face-to-face tutorials and assignments as instructional strategies, which take more time. The TTCs offer only one degree programme, the BEd, which generally takes one year. A few TTCs offer an honours BEd and an MEd.

The 14 government and 104 private TTCs are under the academic and administrative control of the National University and the Directorate of Secondary and Higher Education (DSHE). The National University oversees academic matters (curriculum and examinations), and the DSHE oversees the administration of the government TTCs (appointments, transfers, promotions, etc.). The National University and DSHE are the authorities responsible for ensuring the quality of secondary teacher education. The National University also offers affiliation to the 104 private TTCs, monitors their academic and administrative activities, conducts examinations and awards degrees. The government TTCs are monitored and supervised by the training wing of the DSHE, whereas the private TTCs are monitored and supervised by the National University authority.

ICT-based trainings are allocated in primary schools, but they rarely occur. One ICT training is usually organised every two to three years, but even that depends on donor organisation funding, and, at most, two teachers from each school receive the training. Embedding ICT in education has been failing due to a lack of resources, knowledge and skills as well as pedagogical difficulties in integrating technology into instruction. Furthermore, a digital divide exists between rural and urban primary schools, as the former lack access to devices, mentorship and materials.

The Organisation for Economic Co-operation and Development (OECD) (2001) uses the term *digital divide* to describe the gap between individuals, households, businesses and geographic areas at different socioeconomic levels with regard to both opportunities to access ICT and use of the internet for a wide variety of activities. ICTs are not equally or universally accessible to all individuals and communities, resulting in disparities in

ICT access. Specifically, gaps currently exist between people considered to have access to ICT services and those who do not. The digital divide is ascribed to number of factors, including income, education level, age and location. The digital divide is also described as digital poverty, information poverty and the digital gap, with *digital poverty* defined as a lack of access to and use of the information and communications provided by technology. Warschauer (2003) argues that the term should not be used at all and should instead be replaced by *social inclusion*, which sounds more positive and does not presuppose that there is a separation between those who are 'inside' or 'outside' or on 'this side' or 'that side' of the divide.

In a resource-restricted country such as Bangladesh, ICT-based intervention by means of a common social media platform can be an effective means of TPD. This project primarily aims to scale up the integration of ICT-based learning by providing mentorship and easy access to materials on a common social media platform for primary school teachers, focusing on rural areas to close the digital divide.

Methodology

Nature of the Study

This study will adopt a mixed-methods approach (comprising both quantitative and qualitative data analysis). Multiple instrumental approaches will be employed to collect data. The primary data will be collected using checklists, questionnaires, classroom observations, semi-structured interviews and focus group discussion guidelines.

To ensure the effectiveness and feasibility of the study, data will be collected in the initial piloting phase from 100 primary schools in urban and rural areas of Bangladesh. Secondary school head teachers, assistant teachers, ICT trainers and students will participate in the study to collect qualitative and quantitative data. The data will be analysed using mixed-methods approaches.

Study Population

The full study population will include the following:

- all primary schools in Bangladesh
- all head teachers of primary schools
- all assistant teachers of primary schools
- all students of primary schools
- all primary school classrooms
- all ICT trainers for primary schools

Sample and Sampling Procedure

The study will cover all the geographical administrative divisions in Bangladesh. The sample categories for the pilot study are described below.

- A total of 8 metropolitan cities and 16 districts will be selected randomly from different geographical locations in Bangladesh. Among the districts, 1 will be selected randomly from each of the administrative divisions.
- A total of 32 upazilas will be selected from the selected districts, i.e. 2 upazilas from each district. In selecting the upazilas within the selected districts, the sadar upazila will be selected purposively, whereas the other upazila in the district will be selected randomly.
- A total of 280 primary schools will be selected randomly in the selected metropolitan cities and upazilas. Among the schools, 120 primary schools will be selected from the metropolitan cities, i.e. 15 schools from each city, and 160 primary schools will be selected from the upazilas, i.e. 5 from each upazila.
- A total of 280 head teachers will be purposively selected to collect their opinions on the matter of interest.
- A total of 280 teachers for training on ICT will be purposively selected to collect their opinions on ICT and its use in primary school classrooms.
- A total of 280 secondary school classrooms will be randomly selected to observe the situation of ICT feasibility in the classrooms.
- A total of 280 groups of students (each group consisting of 6–8 students) will be randomly selected to collect their opinions on the impact and status of ICT training of secondary teachers.
- A total of 10 ICT training providers will be purposively selected to collect their opinions regarding teacher training on ICT and its impact at the school level.

After the piloting phase, this project will be implemented nationwide in all 38,033 primary schools in urban and rural areas. It will follow the scaling theory of change as its conceptual and analytical framework. The project will be implemented in five phases as described below.

The first phase will focus on a needs assessment of the teachers based on a baseline survey. The second phase will first analyse the findings of the needs assessment and then prepare training materials based on the findings. These two phases will be conducted in the first year of the project. In the second year, the third phase will begin by developing the training materials and piloting them online. The teachers will be trained on the use of the digital devices, how to easily access the important links and how to implement the learning in classrooms. In phase four, the pilot data will be analysed, followed by an evaluative study. Based on the findings, the final phase (in the third year) will scale up the existing interventions.

Subsequently, the project will be implemented nationwide for one year.

The training materials will be uploaded to an existing government website. The government has taken some initiatives to use ICT in education. For example, it published 61 million results of public exams via the internet and 37.4 million via short message system (SMS) in 2012, and 63 million results over the internet and 38 million via SMS in 2013. Moreover, in the past year, 2.7 million admission applications were received through SMS. Furthermore, the government introduced multimedia classrooms in 503 secondary schools in 2012 and in 20,500 secondary schools in 2013 to ensure ICT in classrooms. The government also arranged ICT training for secondary school teachers through the Access to Information (A2I) project, the Teaching Quality Improvement project and other projects.

The A2I Project is organising an ICT training programme for secondary school teachers that aims to develop the ICT teaching and learning process in classrooms, increase the ICT usability of secondary teachers and develop the teachers' ICT skills. The 12-day training programme follows a participatory method with the main objective of learning how to develop digital content and how to apply it in the secondary classroom. The major content areas include the following:

- using MS Word
- using MS PowerPoint
- internet browsing
- downloading pictures and using them in PowerPoint
- video cutting, clipping, joining and conversion

- using a multimedia projector
- using Shikkok Batayon
- downloading and installing necessary software

Plan for Evaluation

The evaluation will be done in three phases. All the teachers will be trained for six months. Data will be gathered from the pre-training survey and training observations. There will also be an in-training survey to identify differences from the pre-training survey and observations. Feedback will be shared to scale up the training if required. At the end of the training, a post-training survey will be conducted along with observations. All the survey and observation data will be analysed, and feedback will be shared with the respective trainers and trainees for further improvement. Everything will be documented.

Partner Organisations

The project will be implemented in cooperation with MOPME, UNICEF and Save the Children, with the South Asian Institute for Social Transformation (SAIST) being the primary stakeholder.

Timeline

The project will be implemented over three years. The first year will focus on collecting data and preparing training material based on the findings. The second year will focus on training and gathering feedback from the piloting. The third year will focus on scaling up the interventions and nationwide implementation.

Budget

Table 1. Proposed budget

Line Items	Unit cost in USD							Total in USD
		1 st year		2 nd year		3 rd year		
		12 months	Budget	12 months	Budget	12 months	Budget	
Personnel								
i. Research coordinator (1 person)	800	12	9,600	12	9,600	12	9,600	28,800
ii. IT officer (1 person)	600	12	7,200	12	7,200	12	7,200	21,600
iii. Monitoring officer (2 persons)	500	12	6,000	12	6,000	12	6,000	18,000
Subtotal								68,400
Website expenses								3,000
Trainers (10)	---	---	----	12	1,000	120,000		120,000
Operational expenses								3,000
Grand TOTAL								194,400

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