

Realising the potential of online teacher development courses to improve student learning – a brief for policy makers

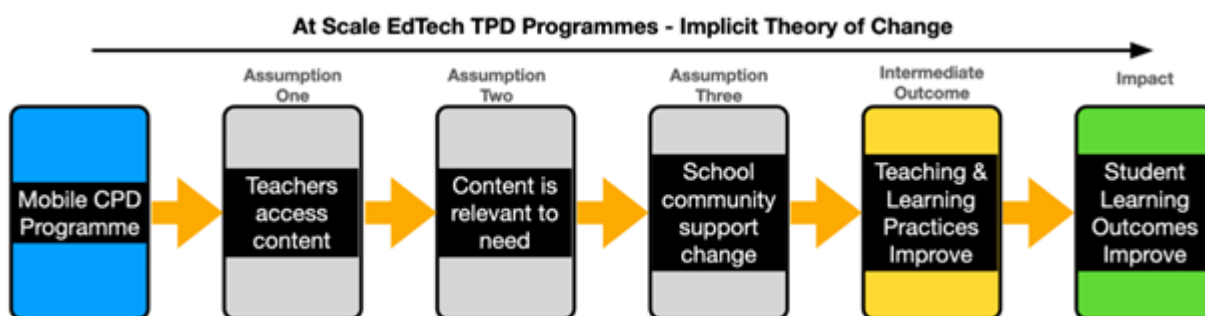
Research purpose and question

3MPower is a collaborative research project between the Institute of Education and Research at Dhaka University and The Open University. 3MPower is funded by the EdTech Hub to address the gap in research evidence on the experiences and outcomes of using technology for teacher development in schools serving low-income rural communities, and the teaching and learning of foundation skills in numeracy. Worldwide, almost half of all children are expected to finish primary school without strong foundation skills. This is sometimes referred to as ‘learning poverty’ (World Bank, 2019) because children from lower-income households and communities are disproportionately affected (UNESCO, 2017). In Bangladesh, less than one-in-five students achieve expected standards in math by grade 5 and improving foundation skills is a national priority (MoPME, 2017). The findings presented here address the research question: How are primary numeracy teachers using mobile learning for teacher development in rural schools and in what ways does this change learning and teaching?

Research design and methodology

Conceptually and practically, there is a gulf between the idea of teachers looking at something on their mobile phones and their students’ learning outcomes improving. When mLearning for TPD is being deployed to improve student learning outcomes an implicit set of assumptions are established bridging between the input (mLearning for TPD) and the desired outcomes (improved student learning), as shown in the figure below.

Figure 1. Theory of Change



The first phase of research, carried out in 2022, included four studies into the processes which link the mobile CPD programme with changes in teaching and learning. These studies (1A, 1B, 1C, 1D) generated evidence to help national stakeholders understand how they can strengthen the design and delivery of future

at-scale mobile CPD programmes—to achieve greater impact in schools.

The study (1A) examines the first assumption—teachers, especially those serving marginalised rural communities, can access the mobile CPD programme—and explores issues around the equity of teachers’ access. Study 1a is framed around

the research question – Which factors affect the equity of teachers access to mLearning for TPD? The Participatory Ethnographic Evaluation Research (PEER) approach was used to gain insights into teachers' access to mobile technology for their professional development. Twenty PEER researchers, themselves numeracy teachers in rural primary schools, were purposively selected from 10 Upazillas (two from each Upazilla). They attended workshops to introduce them to the PEER method, to identify important issues, discuss the processes by which each of them would recruit and gathered data from 5 of their colleagues through one-to-one semi-structured interviews. Hence, a total of 100 primary level mathematics teachers took part in the study. Each teacher was interviewed twice to cover five main themes that the study focused on physical access, cultural access, motivation, attitudes, and skills/use of technology;

This study (1b) examines the second assumption—that the content of the CPD programme is relevant to teachers' needs—and explores issues around the learning design of the online professional development programme, the pedagogy of numeracy teaching within the programme, and how teachers respond to both. Study 1b is framed around the research question: Is the pedagogy of mLearning for TPD relevant to teachers' and learners' needs, in terms of the skills required to help students acquire foundational numeracy? The study examined three sources of evidence to understand the relevance of the CPD content to teachers and learners needs, in the settings of marginalised schools in Bangladesh.

This study (1c) examines the third assumption—that the school community

supports change in the teaching and learning of numeracy—and explores issues around the role of communities of practice in translating the intent and content of the CPD course into behavioural change in schools. Study 1c is framed around the research question – In what ways, if any, do communities of practice embrace mLearning and support improvements in teaching practice in schools? This study used a Participatory Ethnographic Evaluation Research (PEER) approach to gain insights into teachers' experiences of support for professional development and introducing changes in teaching and learning within their schools. Twenty primary mathematics teachers who worked as PEER researchers, were purposively selected from 10 remote Upazilas (two from each Upazila). All of them attended workshops to learn about the PEER method, to identify important issues, discuss the processes of recruiting and gathered in depth data from 5 of their colleagues through one-to-one semi-structured interviews. That means a total of 100 primary level mathematics teachers took part in this study. Each participant teacher was interviewed twice by the PEER researchers. This study focused on 8 main themes respectively: Participation of Communities of Practice, Teacher Shortage, Workload, Distance between Schools, Network Issues on Participation in Remote CoP, Commitment and Interest, Trust and Relationship and Anonde Gonit Shiki. In each interview half of the themes were covered.

The first cycle of PEER research (Hedges et al., 2022) found most teachers talked either very vaguely, or not at all, about applying any specific learnings or activities from the online course in their teaching. Such accounts often suggested only occasional

use, if any. The second cycle set out to purposively sample teachers who were applying AGS activities regularly in their teaching, and to understand their stories and context. Each PEER researcher was asked to try and find three such stories of teachers within their upazilla. Many found it very hard but eventually 118 such stories of teachers were found across the ten upazilas - very nearly achieving the target of 120 accounts.

The Government of Bangladesh is increasingly investing in teacher professional development (TPD) through EdTech, principally through a series of on-line TPD courses. These are available through Muktopaath, its national Bangla-language e-Learning platform, that includes Anonde Gonit Shikhi courses, which teachers can access through their mobile phones. This study seeks to examine the question 'How cost-effective is using TPD with mLearning in Bangladesh?' using Anonde Gonit Shikhi as a case study. The national Muktopaath platform has very substantial reach; for example, there are now over 200,000 unique users of Anonde Gonit Shikhi, of which over 160,000 are teachers, equivalent to nearly half of all Government primary teachers. This study can therefore speak into the global discourse on understanding interventions that have the potential for 'significant and sustained impact on learning outcomes in a way that is cost-effective, scalable, and context-appropriate' (Mitchell and D'Rozario, 2022).

Finally, the methodology aligns with the EdTech Hub's Cost-Effective EdTech Working Papers series. The methodology involves measuring the costs, cost structures and reach of Anonde Gonit Shikhi and then

comparing the learning outcomes (results) of the programme against its costs.

Findings

Access, Use and Barriers

1. Access to online learning (including platforms, devices and networks) is not a major barrier for most teachers. Almost all teachers have access to smartphones, and some also have access to other devices. Almost all teachers know about AGS and most had been able to complete the course (some were motivated by getting a certificate of completion).
2. Although many teachers claimed occasional use of AGS activities in class, very few gave specific examples of any AGS activities they had used in classrooms.

"...he doesn't use all the techniques he learned from the course... as he finds them hard to apply." (Mollahat-PEER2-T3-1A-Cycle2)

For many, this lack of classroom use was, because:

- a. They were demotivated by practical constraints, such as large class sizes or activities which seemed difficult to manage, or by unsupportive school environments.
- b. It was not clear to them that they were expected to use the activities in class.
- c. They mistakenly thought they needed technology in class to use the activities.

Enablers of Use

3. Teachers were more likely to use the AGS activities regularly in class when they have:
 - a. Encouragement to do so from their head teacher
 - b. Support from other teachers

“One of his colleagues also teaches with AGS techniques. They help each other. Their head teacher encourages them.”
(Alikadam-PEER 2-T3)

Benefits of use

4. Teachers who use AGS activities regularly in class see positive impacts on:
 - a. student behaviour,
 - b. student inclusion,
 - c. student numeracy skills,
 - d. teacher motivation.



Photo Credit: 3MPower research team

5. Teachers, who use AGS regularly, also see positive impacts on teacher development within or between schools by:
 - a. increased sharing of experiences of teaching numeracy,

- b. greater teacher collaboration.

“Other teachers, students & guardians come to see what is actually happening in the classroom hearing the laughter & joy of the students” Sarankhola-PEER1-T2- 1A Cycle 2

On Motivation and Professional Development

- Some teachers reported that they can get and provide professional help through online communities which they find convenient, quick & easy.
- When teachers begin to be successful in implementing AGS activities and teaching Maths, they often encourage others to do the course and use AGS activities in their teaching.
- Teachers most often experienced support from head teachers and colleagues regarding the access and implementation of the AGS course techniques in the classroom.
- Many head teachers are highly supportive and help to overcome resourcing issues.
- Teachers reported that they have insufficient number of teachers in the school and this shortage of teachers increase workload and decrease collaboration.
- As communities ‘of learning and practice’ develop, teachers say they become more confident and motivated, feel more effective, and feel better supported.
- Most of the teachers said that geographic effects are notable in the

Haor, Hilly and Char areas, making journeys to schools and between schools long, hard and slow. This limits teachers' ability to get help face-to-face from teachers on their own or from teachers in other schools.

- Opportunities for peer-learning between teachers and ongoing support for application to practice in schools – There is a 'formal' online forum where teachers can share their views and experiences and many teachers have shared their experiences through non-formal social networks and apps, posting pictures of the activities and resources, but the learning design of the online course largely assumes teachers work as individuals—logging on, watching the videos, and completing an online quiz to check understanding.

Recommendations

The followings are some recommendations based on the findings of studies:

1. Harness teachers' high levels of access to online courses

Work with Aspire to Innovate (a2i) to fully link AGS face-to-face trainings and online courses, utilising teachers' ongoing access to AGS resources on their phones to support teachers to continue their learning together when back in school.

2. Develop Education Officers' and teachers' understanding of the importance of using AGS activities in class

Communicate key messages to field-level Education Officers that support regular use of AGS activities by teachers in class, for example:

- the purpose of AGS is for teachers to try the activities regularly with students in class,
- teachers do not need technology in class to use the AGS activities.

Offer professional development to field-level Education Officers about how AGS can be successfully implemented in schools and classrooms.

3. Promote head teacher support for use of AGS activities in class

Support head teachers, through trainings and meetings, to facilitate school-based implementation of AGS in their schools, in ways that encourages teachers' application in class.

Encourage District Education Officers and Upazila Education Officers to develop a monitoring and feedback framework to support school-level implementation of AGS in their District and Upazila.

4. Promote support between teachers

Encourage field-level Education Officers to use teachers, who are regular AGS users, to contribute to Upazila TPD events on implementing AGS in class, drawing on the teachers' own experiences of using AGS techniques and activities with their students.

5. Provide follow-on support and monitoring over time

Teachers' engagement with online learning should be imagined as an 'ongoing journey' of 'blended learning' over a period of several weeks or months, rather than a 'one-off'

engagement over several hours. This allows for repeated cycles of online learning followed by practical exploration in the classroom, then sharing of experiences and insights before starting the next cycle of learning.

6. Share the benefits of regular use of AGS activities in class

Communicate to field-level Education Officers, head teachers and teachers the benefits of regular use of AGS activities in class, highlighting the positive impacts on students' and teachers' motivation and learning.

Credits

This brief was written by Hafizur Rahman, Tom Power and Nure Alam Siddique (Institute of Education and Research, Dhaka University) in collaboration with the 3M Power Research Leadership Team and Early Career Researchers. The views expressed herein are those of the authors and do not necessarily represent those of the Centre for the Study of Global Development or The Open University.

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