Towards a pedagogic framework for Teacher Professional Development through blended learning

Introduction

This policy brief is based upon research into Anonde Ghonit Shikhi (AGS), a nationwide teacher professional development programme to 'make learning math fun' in Bangladesh. AGS is the most popular Teacher Professional Development (TPD) course on Muktopaath, the government's Bangla-language e-learning platform. Over 180,000 primary teachers have completed the initial online course. Nine online modules target grade 1-2 math skills. Each module contains three or more numeracy activities, explained through animated videos, and finishes with a quiz. Completion of the online course entitles teachers to participate in a week of face-to-face training. There is no follow-on support or monitoring for implementation in schools. AGS's approach to blended learning for TPD is aligned with Bangaldesh's 'Blended Education Framework for All' (Akturazzaman and Chowdhury, 2022) and is common to government led TPD programmes across Bangladesh. Mobile phones are by far the most common way for people to access the internet in Bangladesh and most teachers accessed AGS on their phones. Hence, AGS is an example of mobile learning and of blended learning for TPD.

Mobile Learning for the Empowerment of Marginalized Mathematics Educators (3Mpower) was a research project led by The Open University (UK) in partnership with the Institute of Education and Research (University of Dhaka, Bangladesh). 3MPower was funded through the EdTech Hub (2021-2025). The project sought to understand both the processes and outcomes of the AGS intervention among teachers and schools serving marginalised rural communities. 3MPower was designed and carried out in collaboration with education decision-makers and with rural educators and education officers.

The findings and recommendations have widespread significance for future blended TPD programmes in Bangladesh. The findings also address 'high potential evidence-gaps' in the global evidence-base, concerning the experiences and outcomes of technology-enhanced TPD among teachers and learners in marginalized rural communities.

As part of the thinking for the next Primary Education Development Programme (PEDP5), the Directorate of Primary Education (DPE) seeks to further develop their

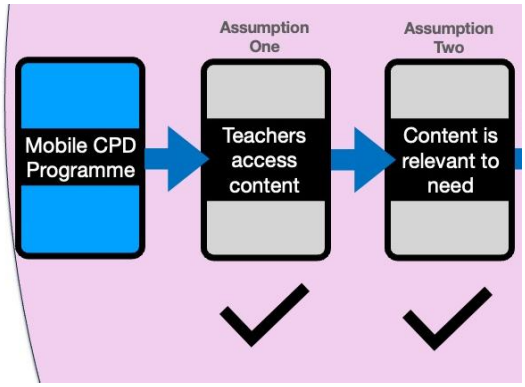
pedagogic framework for Teacher Professional Development through blended learning, moving from 'one-off' online and face-to-face training to a more integrated and applied approach which better supports professional development in classrooms and schools. The 3Mpower research provides critical insights which may contribute to the development of new and more effective approaches to blended learning for TPD, in Bangladesh and internationally.

The 3MPower research project

- 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?
- Methods: Large-scale, mixed-methods, multi-phase design—evaluating the processes and outcomes of Anonde Ghonit Shikhi (AGS, a nationwide teacher professional development programme to 'make learning math fun').
- Sample: Over 400 teachers and 2,000 learners in rural primary schools actively participated in the research and were sampled from ten marginalised rural upazilas across four geographic regions—Chittagong Hill Tracts, Hoar, Coastal and Char. A further 1,300 teachers and headteachers responded to surveys.

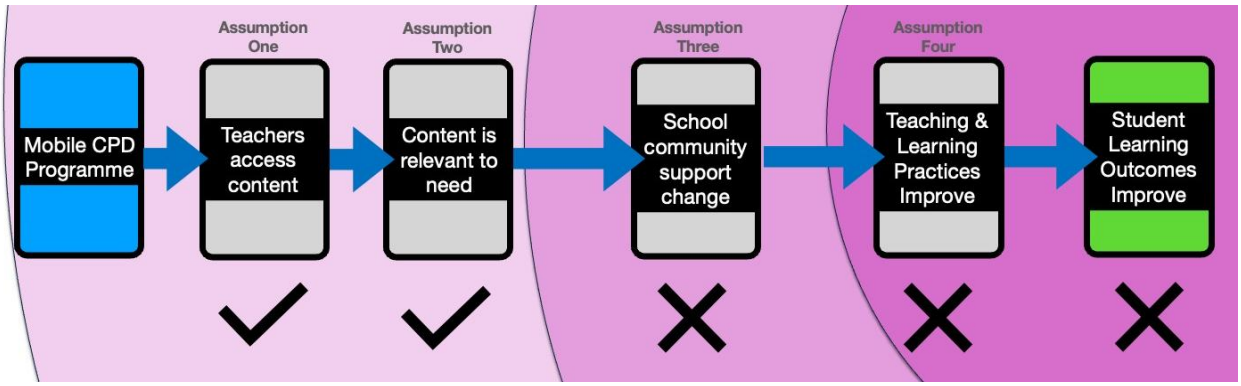
Findings

1) In almost all schools, teachers completed the online professional development course using their mobile phones and most teachers liked the course content and thought it was helpful



- Almost all teachers accessed the online course.
- Most used their mobile phones to complete the course.
- Teachers were committed to overcoming obstacles such as unreliable network access at home or at school, needing to buy a new mobile phone, and needing to buy additional data.
- Most teachers found the content relevant.

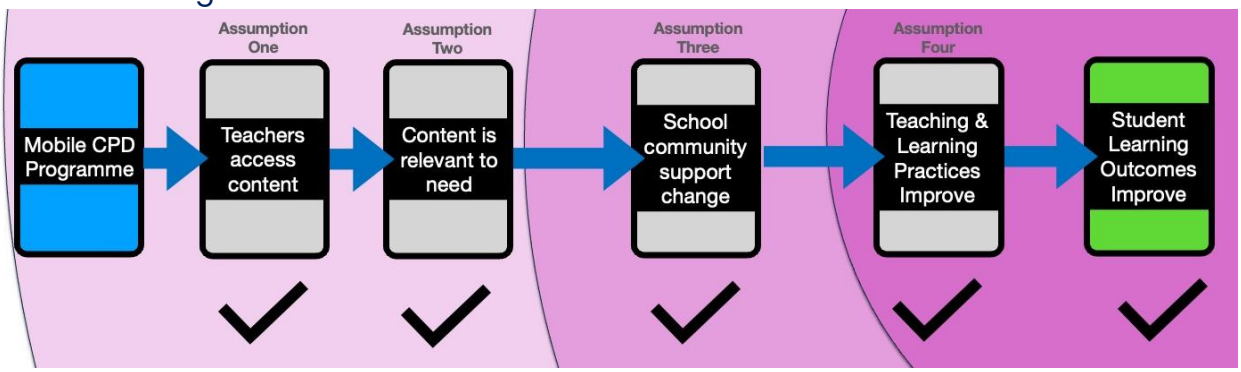
2) In most schools (estimated >90%), few teachers put the activities into practice



In most schools, teachers were not encouraged to put the programme into practice—by education officers, head teachers, or their colleagues.

- Some teachers didn't realise they were meant to put the activities into practice.
- Some teachers thought they needed computers and projectors to use the activities in class.
- Some 'tried' the activities occasionally but didn't continue to use them.

3) In some schools (estimated <10%), the school community encouraged practical exploration of the activities. Ongoing use led to some improvements in teaching and learning



- Local teachers, acting as peer-researchers for 3Mpower, each found two or three teachers in their upazila who were continuing to use AGS activities in class (at least occasionally). We call these teachers 'ongoing users'.

- Ongoing users had been encouraged to put AGS activities into practice by:
    - their head teachers, and
    - other teachers in their schools (and sometimes local teachers from other schools).
- **Ongoing users thought AGS helped them improve their teaching and their children's learning in numeracy.**
- **Research activities confirmed significant but modest improvements in teaching and learning.**

4) The costs of providing online training are <1% of the costs of face-to-face training

- The online component of AGS cost the government approximately BDT 37 ($0.37) per teacher (excluding costs to teachers, i.e. purchasing mobile phones or data).
- The face-to-face (subject based training) component of AGS cost the government approximately BDT 8,013 ($80) per teacher.

Conclusions

- Without support for implementation in school, there is little impact on teaching and learning from the current blended learning approach to TPD in Bangladesh.
- With support for implementation in school, ongoing users of AGS saw significant changes in their teaching, which were confirmed by independent lesson observations.
- While learners whose teachers were ongoing users of AGS were more successful than other learners, numeracy outcomes remain low.
- Improvements in teaching and learning among ongoing AGS users and their learners are helpful but not sufficient to enable learners to acquire the foundation skills they need to progress successfully in their education.

Policy Implications

This evidence shows that, even in marginalised rural schools, the quality of teaching and learning can be improved by teachers accessing online professional development, through their mobile phones (see Policy Brief below, Blended learning for teacher development: Evidence of impact).

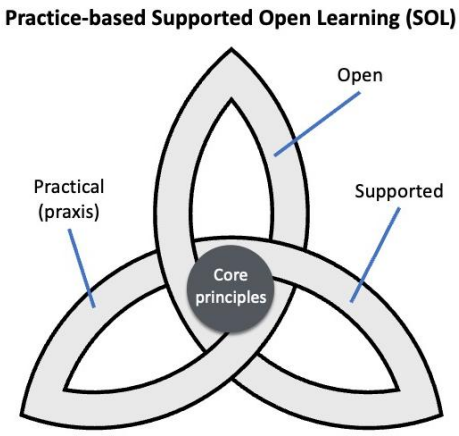
- These findings provide robust evidence of changes in teaching and learning associated with the use of EdTech for TPD.
- The findings address a global evidence gap and are nationally and internationally significant
- Few other studies present robust and large-scale evidence of improvements in teaching and learning from the use of EdTech for TPD—particularly in rural and marginalised communities.

However, the evidence also shows that positive impacts are not seen in most schools.
Impacts on teaching and learning are typically seen where the school community encourages and supports teachers to put activities from the TPD programme into practice in the classroom.

- Without support for implementation in school—such as head teachers encouraging teachers to work together to make learning materials, put the activities into practice in their classrooms, and share their experiences of doing this—there is little if any impact on teaching and learning.
- The literature indicates school level support is crucial for any TPD, not just blended learning.
- The current approach to blended learning in Bangladesh does not include school-level support.

Currently, teachers first complete a short online training programme. The certificate of completion from this makes the teachers eligible for one-off face-to-face training, which might happen several months later. After completing a week of face-to-face training, teachers return to school. Without any ongoing support or monitoring, most teachers are unable to sustain any attempts to put the training into practice—on their own, without support from their school—and any impacts on teaching are lost.

A new understanding of blended learning is needed, where online courses (open learning) and face-to-face support (supported learning) are not separate 'one-off' events but are ongoing processes which encourage and enable teachers to act differently in the classroom, and to reflect upon what they learn from this (see figure 1, below).



We propose three aspects of 'practice-based supported open learning (SOL)' which work together as part of a greater whole:

- **Open learning**—the open educational resources (digital or print materials) which expose teachers to new knowledge, ideas and practices to explore in their teaching.
- **Supported learning**—the support teachers receive for their professional learning, from others (peers or head-teachers, education officers, mentors, coaches or facilitators) in person in their schools, in informal spaces, through in-house training, or in upazila workshops.
- **Practical learning**—the teachers' action in, and reflection upon, teaching with the purpose of improving students' learning. Practical learning is the intentional combination of well-informed thought and action to bring about change for good.

These three things are all part of one continuous process of professional development—they are not three separate activities or phases of learning. All three come together in each professional development act. Each aspect feeds into and draws upon the other two.

Example: In a professional development meeting, in school or between schools, teachers come together to help each other learn (supported learning). They look at the professional development resources together online, on their phones, or in print (open learning). They practice making any teaching and learning materials they need and how to use these in the classroom activities promoted by the programme (practical learning). Later, when preparing to use the activity with learners, teachers remind themselves of the activities by looking again at the materials (open learning). They think about how to adapt the activity for their learners. They teach the lesson and later reflect upon what they learned from the experience (practical learning). The next time they meet with their colleagues, they share their practical experiences and reflections (supported learning), before starting the process again. No one aspect—open learning, supported learning, practical learning—makes sense except in relation to the others. All three aspects are mutually interdependent and inter-twined.

Recommendations

We recommend that the Bangladesh Directorate of Primary Education (DPE) further develop their blended education framework (further reading, below) to strengthen school-based support for implementation of TPD in classrooms across the school system.

- Continue to Invest in blended learning. Most teachers can access online learning, and, with school-level support, blended learning can improve teaching quality and learning outcomes— even in remote rural schools. On-line components of blended learning are low cost with high reach and can therefore offer 'value for money'.

- Redefine blended learning to integrate open, supported, and practical learning in ongoing professional development processes within and between schools.

- Ensure the purpose of 'practical learning' and 'supported learning' is clearly outlined in all course materials—to guide teachers, head-teachers, education officers and others involved in blended learning programs. See policy brief below, Designing blended learning programmes which impact teaching quality and learning outcomes.

- In every professional development activity:
    - Utilise 'open learning' resources,
    - Provide opportunities for 'supported learning'
    - Emphasise 'practical learning'—exploring promoted activities in the classroom.

- Collaborate with teachers, school leaders, and teacher educators to ensure all schools support teachers in implementing professional development programmes in the classroom. See policy brief below, How can headteachers help teachers put Continuous Professional Development into practice in their schools?

Further reading

3MPower (2025) Policy brief: Blended learning for teacher development: Evidence of impact 3Mpower-Mobile Learning for Empowerments of Marginalised Mathematics Educators - EdTech Hub

3MPower (2025) Policy brief: How can headteachers help teachers put Continuous Professional Development into practice in their schools? 3Mpower-Mobile Learning for Empowerments of Marginalised Mathematics Educators - EdTech Hub

3MPower (2025) Policy brief: Designing blended learning programmes which impact teaching quality and learning outcomes 3Mpower-Mobile Learning for Empowerments of Marginalised Mathematics Educators - EdTech Hub

Aktaruzzaman and Chowdhury (2022), Blended Education Framework for All: Bridging developing and developed country education ecosystems. *Tenth Pan-Commonwealth Forum on Open Learning*. https://oasis.col.org/server/api/core/bitstreams/dd5e08df-ec0a-4fdc-9de6-6c925da5441c/content

Wolfenden, F. (2022) Designing Teacher Professional Development with ICTs to Support System-Wide Improvement in Teaching, Quezon City, Philippines, Foundation for Information Technology Education and Development, Inc. (FIT-ED) [Online]. Available at https://tpdatscalecoalition.org/publication/tpdatscale-working-paper/ (Accessed 5 December 2023).