Open Research Online

The Open University's repository of research publications
and other research outputs

School-based teachers' professional development through technology enhanced learning in Bangladesh

Journal Item

For guidance on citations see FAQs.

oro.open.ac.uk

School-based Teachers' Professional Development through Technology Enhanced Learning in Bangladesh

M Mahruf C Shohel[1] and Frank Banks
Department of Education, The Open University, Milton Keynes, UK

Abstract
To promote significant pedagogical change, the most successful teacher education programmes for the global south happen in the school context. This paper is based on a pre-pilot intervention study of an international education development programme in Bangladesh. Technology enhanced learning, in this case the use of Apple iPods (iPod touch), was used to support teachers' teaching and learning in their school contexts. This paper presents evidence to demonstrate how such school-based technology enhanced support systems impact on classroom practice and helps teachers' professional development. Using the case of a pre-pilot intervention in the Underprivileged Children's Educational Programs (UCEP) schools, it explores the teachers' professional development by analysing interviews with the teachers who were participating in the pre-pilot intervention programme, and draws the conclusion from the collected data that school-based teachers' professional development through technology enhanced learning is contributing significantly to in-service training in a resource constrained context.

Keywords: school-based, teachers' professional development, UCEP-Bangladesh, technology enhanced learning, hand-held device.

Introduction

Teacher education across the globe has undergone a significant rethink and reform in recent years. Most countries have placed teacher education at the forefront of the national policies. Following on from school building programmes, teachers' professional development is now at the core of attempts to expand, improve and reform the education system. Expanding populations continue to make huge demands on the institutions responsible for preparing teachers. But there is a sense of crisis around the future of the teaching profession around the world (Moon 2007, UNESCO 2005) as the existing institutions of teacher education and training are unable to cope with the scale and urgency of demand required (Moon 2000). The Millennium Development Goals (MGDs) agreed by the world community at Dakar in 2000 include a commitment to provide basic education for all children by 2015. This represents a significant challenge for many countries. For example in Sub-Saharan Africa it is estimated that 44 million children have no access to primary schooling. In India, 2 million more teachers are needed for the known childhood population, yet many more children's births are not registered. Extensive efforts are being made by national governments and international organisations to meet this goal. Inextricably linked to this is the need to supply and train effective teachers for the expanding sector. Both supply and training pose organisational and logistical problems. Teaching is now in competition with other knowledge-based occupations to attract entrants to meet the demand for the 21st century.

As countries supply more teachers, their quality needs greater attention. Teachers' professional development is a burning issue in countries such as Bangladesh, where the State has largely failed to provide basic education for its citizens (Shohel and Banks 2010). One in five teachers has no teaching qualification in Bangladesh (UIS 2006). Therefore, with the teacher crisis, quality has often been a

---

[1] Corresponding author's email: mahruf.shohel@open.ac.uk

hostage of quantity (Global Campaign for Education 2006). There is a general absence of visual resources used by the teachers with the exception of the ubiquitous blackboard. The quality of education and training of teachers is central to the success of the Education for All (EFA) campaign worldwide and 'schools and teachers remain central to the achievement of a quality education process' (Yates 2007, 2).

'New technologies are transforming the ways in which businesses operate and people work, boosting demand for new knowledge and new types of skills. They are providing new alternatives of learning, offering a potential solution to meet challenges such as demand for more flexibility in delivery of education in terms of time, location, content, and form' (Watabe et al 1995, 141). Therefore, technologies are playing an increasing role in education (Gaskell and Mills 2010), and mobile technologies have a significant role to play in teachers' professional development (Shohel and Power 2010). Very many teachers have access to a mobile phone, for example, and the use of mobile technologies is increasing for some aspects of teaching and learning across the developing and developed world.

Mobile technology is first used in teacher training in Bangladesh in 2006 as part of the e-Teacher Training component of the Teaching Quality Improvement in Secondary Education (TQI-SE) Project (see for more details Pouezevara and Khan 2007). In the case of English, both at the primary and secondary level English language teaching and learning is not satisfactory in Bangladesh (EIA 2009) as most students have few opportunities to speak or listen to English for communicative purpose during their English language lessons. Following in the foot-steps of TQI-SE, English in Action (EIA), an English language educational development programme is aimed at significantly improving the teaching of English in all educational sectors using new mobile technologies across Bangladesh. Starting in 2008, EIA is a nine-year programme offering alternative forms of support for teachers' professional development through technology enhanced learning. This paper looks at teachers' understanding and attitudes using iPods, the first mobile device trialled for supporting their teaching and learning.

Context of the study
English in Action (EIA) is the longest educational development programme in Bangladesh at the present time. However, gaining understanding of teachers' professional development (TPD) during the pre-pilot phase of the project (2009-2010) was very important before starting the country-wide piloting phase. Overall, it provided English language teachers in Bangladesh with professional development by offering training, resources and classroom materials through the use of iPods, so that they could enhance their own teaching skills and bring new ideas into the classroom. Teachers were given MP3 players to use in the classroom with battery-powered speakers, so that in addition to the training for teachers, pupils could also listen to podcasts and other audio materials, in conjunction with their existing school textbooks and other supplementary learning materials such as posters and flash cards which were supplied by the project.

The EIA pedagogical approach is to promote a carefully structured, enjoyable learning environment where pupils are engaged and motivated to explore the wider world without fear (for more detail, see Shohel and Banks 2010; Shohel and Power 2010; Shohel and Shrestha 2010). For the pre-pilot intervention of EIA Secondary Teaching and Learning Programme (STLP), the Underprivileged Children's Educational Programs (UCEP) was chosen as 'test-bed' for the mainstream country-

wide piloting of the programme. UCEP is a non-government organisation (NGO) in Bangladesh which provides general education and vocational training for working children. Currently over 30 thousand poor working children, who have generally missed out on their primary education, are studying in UCEP schools. Students are accepted into the programme no younger than age 10 for girls and 11 for boys. UCEP schools operate 3 shifts per day, each of 3 hours duration. As the children continue to work and earn while they attend school, this allows a child to choose a shift of his/her convenience, in consultation with their parents, to minimise the economic loss to the family for the children attending school. Each 3 hour shift is focused on general education but where possible examples are drawn from a technical context. For example, the English alphabet is taught through naming of craft tools – D for dividers, H for hammer. Stories in Bangla are linked to the discovery of inventions and the use of agricultural and other devices. After grade 8 UCEP continues Technical Education training on 16 professional trades (see UCEP, 2008 for more detail about these trades).

Students basically follow the National Curriculum and Textbook Board (NCTB) curriculum, both at primary and lower secondary level (grades 1 to 8). However, the curriculum has been abridged in a careful manner so that it remains comparable with that of the national mainstream curriculum. The curriculum consists of Bangla (mother tongue), English, mathematics, vocational, social environment and hygiene. The students learn in a highly vocational and practical way using English where necessary as technical vocabulary (EIA, 2009b). At the end of their training they are guaranteed a job. In contrast to the formal government system, these poor working children attend school regularly and complete their education. The attendance rate is over 94% and the drop-out rate is very low (UCEP 2008).

Normally a teaching qualification is not needed to be a teacher in a UCEP school. Teachers get some basic and subject-based training immediately after their recruitment (Howes, Grimes and Shohel 2011).

School-based support model for teachers' professional development
Professional development is the process of improving staff skills and competencies needed to produce an excellent education for students (Hassel 1999). The teachers are always the centerpiece of educational change, being the active and powerful change agents who have the power to make a difference, both individually and collectively (Castellano and Datnow 2000; Hurst 1999). As reform efforts need to place at their core the processes of teaching and learning, they change significantly what happens in the schools. Yet teacher beliefs and attitudes about an innovation are the important consequences, concerns and context variables associated important in determining new and different teacher behavior (Burke, Harste and Short 1996; Kennedy and Kennedy 1996; Laine and Otto 2000; Ros and van den Berg, 1999). Ultimately, the individual teacher determines the extent to which each innovation occurs.

Professional development sparks curiosity, motivation and new ways of thinking (Kent 2004). It is most effective when there is an ongoing process, which includes proper, well-designed training and an individual follow-up. It can deliver a purpose, cooperation, commitment and community (Langer 2000). It is about change and renewal. The focus must move from a location being primarily outside the school through training by experts to being in school where learning is embedded in the classroom, and from ad hoc development of skills to the production of content-specific skills and knowledge (Hutchens 1998). Successful professional development must be sustainable and, overtime, directly related to everyday teaching.

The EIA school-based support model for teachers' professional development (TPD) is a spectrum of carefully prepared information and communication technology (ICT) interventions for Bangladeshi teachers to empower them to change their classroom practice in schools. The pre-pilot phase was designed to encourage and support communicative language teaching (CLT) through technology enhanced learning. The school-based support model included media players (the iPods) for the English language teachers, preloaded with video and audio language learning resources, along with battery-powered speakers for use in the classroom, and a teacher guide covering twelve modules about CLT, each focused on a particular activity designed to be taught in a secondary classroom. Each module demonstrates the activity, explores the principles underlying the activity, and encourages teachers to use, adapt and extend that and similar activities. This school-based TPD model is based on a range of 'blended' support systems (see Diagram-1) for teachers; including an orientation workshop, a teacher guide, a multi-media player (iPod), cluster meetings of teachers on the programme, another English language teachers from each teacher's school (the teachers are trained in pairs), and school visits from EIA staff giving classroom feedback and technical assistance. The pre-pilot was an experiential learning process for the implementing workforce as well as the teachers as this pre-pilot intervention in UCEP schools was treated as a 'test-bed' for the mainstream piloting phase.
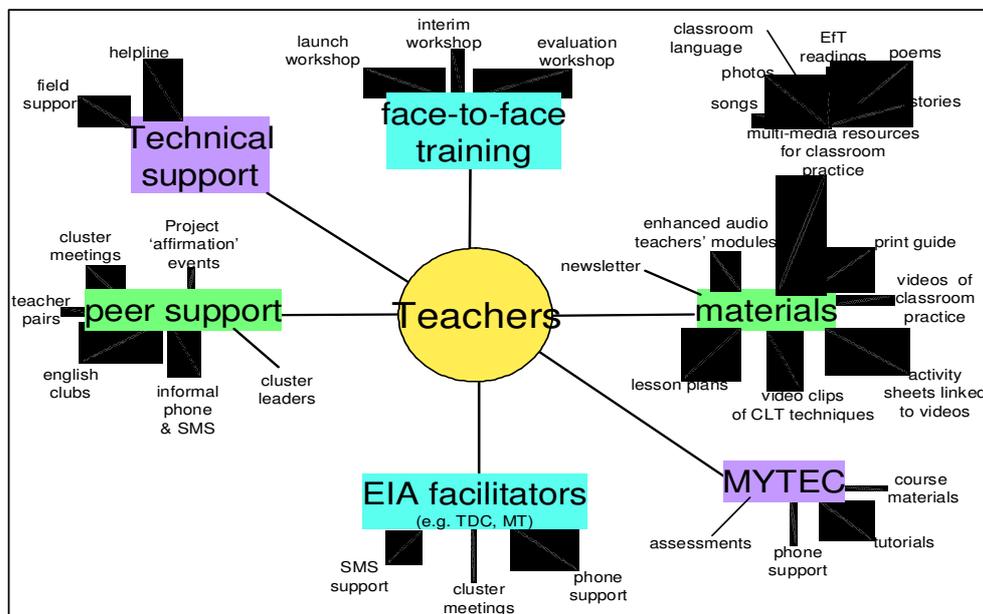

Diagram-1: School-Based Support Model for Teachers' Professional Development (Shohel and Banks, 2010)

Looking in more detail at the _aspects of the 'blended' TPD approach shown in Diagram 1:

The *orientation workshop* was a part of the support systems in providing an induction by the EIA workforce to participating teachers. It was designed for introducing EIA itself and features of communicative language teaching (CLT). This workshop was not considered as a training session - just a get together for teachers with EIA people,

to know each other. Basically it was the stepping stone for teachers to understand what was required in the project.

The teachers were given a *Teacher Guide* which includes twelve modules of different CLT teaching and learning methods. This guide book also explained how to use the different audio and video materials stored on the multi-media player. This guide book always remained with the teachers so that whenever they get time, they could skim through it. There is a section in this guide for classroom language; English phrases which they could easily use during their lessons.

Pair support was another key feature of the support model. Two teachers from each intervention school joined the project together and they were supporting each other and working together towards their joint professional development. Some new points evolved when they discussed in a pair regarding how they could organise their class, how they could engage students in the class or how they could make the lessons more attractive. It is a very effective way to quickly solve practical problems. For example, they could watch a micro-teaching lesson from the audio-visual resources on the iPod and discuss together which method would be better for the specific lesson in their school contexts. Sometimes both of them discussed what kind of teaching aid they could develop and they could also discuss how to deliver a lesson or use methods for a lesson which is not available in the iPod.

Teachers were required to attend a *cluster meeting* fortnightly for formal training on different modules from the teacher guide, helping them to boost their confidence, keep up their motivation and support each other in using communicative English language practices in their classrooms. Teachers planned and demonstrated lessons in different groups in the cluster meeting. One group might miss something in the demonstration and the next groups can identify what could have been added to perform better. By way of preparation, teachers listened to modules from the iPod or read the module from the teacher guide before attending the cluster meeting. During feedback sessions in the cluster meeting, they could listen to others and share their own experience. It was important for experience sharing and reflecting on practice. Reflection was enhanced by the opportunity for teachers to engage in an Open University course based on the production of a teacher 'reflective diary'. The course, *Make Your Teaching Experience Count* (MYTEC) provides an additional motivation to engage in the EIA teacher development programme.

A series of *School visits with feedback* kept the teachers' focused on classroom practice and supported the training implemented in classrooms. This process increased critical thinking of the teachers and it put a level of expectation on them to strive to improve their practice as suggested in the cluster meeting. The main advantage of the school visit was that teachers got face-to-face feedback, encouragement and support from the EIA resource persons. It could also provide EIA project staff with on-going information regarding progress and the ability of the teachers' to cope with the face-to-face training in the cluster meeting and how much they were achieving from the blended training programme. Another positive side of school visit was that it established better communication between teachers, and the trainers as a result teachers got solutions to their problems immediately. They could share their problems with the trainers instantly as they strove to implement English CLT practice in their classroom. English in Action helps teachers to develop their English language skills in a different way through the school-based support systems so that they can use English confidently in the classroom.

In summary, during the orientation workshop teachers were briefed about the EIA intervention, strategies and materials. Teachers were given training on how to

use the media player (iPod) and supporting materials. The teacher guide contains twelve modules on different pedagogical techniques including a section on classroom English explaining how those techniques could be used in their classroom contexts. Teachers were implicitly trained in the cluster meetings in how to use those modules in their classroom.

Methodology

To evaluate the English in Action Secondary Teaching and Learning Programme (EIA STLP) pre-pilot intervention in UCEP schools, a mixed method research strategy was adopted by using a questionnaire survey, classroom observations, and semi-structured interviews with school administrators (SAs)[2], teachers and students. The questionnaire was administered during the orientation workshop at the launch of the programme. Fieldwork was carried out for collecting data through classroom observations and semi-structured interviews during August 2009 and November 2009 in Dhaka, Bangladesh by the first author and two colleague Teacher Development Coordinators (TDCs)[3]. Six out of fifteen EIA pre-pilot intervention schools were selected randomly. From each school, the SA, two intervention teachers and eight students were interviewed.

In total, six (6 schools x 1 administrator = 6) School Administrators were interviewed regarding school policy, teacher recruitment and in-service training processes. Similarly, twelve (6x2=12) teachers participating in the pre-pilot intervention were interviewed regarding their professional development and different aspects of school-base training support systems. Forty-eight (6x8=48) students were interviewed in twelve groups. The questionnaire provided quantitative data to narrow down the study focus through primary analysis. Similarly, classroom observation data was fed into interviews to generate rich interview data. Interviews were conducted and recorded in Bangla. Verbal consent of the participants for using the data for research purposes was taken before recording the interviews.

For brevity, only the teachers' interview data is used for this paper which is focusing on how school-based teachers' professional development through technology enhanced learning is effective for in-service teachers. In other words, for this paper, our specific research question is: How effective did the participants consider the use of a mobile device in the school-based English in Action teachers' professional development programme?

Analysis and discussion

In this school-based teachers' professional development (TPD) intervention, the use of technology, especially the use of hand held mobile devices became powerful tools as a medium of open and distance learning. Though this is a very new area in the context of South Asia, including Bangladesh, it seems very promising in relation to TPD more widely and this is certainly something new to in-service teacher development in the resource constrained context. Interview extracts shows the teachers' attitudes towards use of the iPod for their own professional and personal development. The reaction to the use of such technology is interesting in itself, and relatively new in such resource-constrained contexts.

---

[2] The head of the UCEP school is called School Administrator, though the head of the school in the main stream education system is called Headteacher.

[3] Teacher Development Co-ordinators (TDCs) are the main implementers of the EIA intervention. They have been trained by the Open University EIA team to train the teachers.

The analysis that follows focuses on how effective the teachers themselves considered the school-based teachers' professional development in UCEP schools through technology enhanced support systems. Analysis was conducted using grounded theory (Glaser and Strauss 1967; Strauss and Corbin 1990), in which the aim was to identify the key message that the teachers wanted to convey through the interviews. We intended to empower and allow teachers' own voices (Nelson Mandela Foundation 2005). In the following section, we pull out some findings regarding teachers understanding of their professional development and we have used the following conventions for the presentation of the data:

- Extracts from the transcripts have not been edited; rather, whole paragraphs are presented intact, so that the key points can be seen in the context in which they were made.
- With these extracts, the key words or phrases illustrative of the emerging theme have been highlighted in *italics*.
- Each piece of evidence is given a two-part reference, where 6.38 would indicate the source as being the 38 paragraph in the transcript of the 6th teacher interview.

Benefit of using hand-held mobile device with audio-visual materials
As a hand-held mobile device the iPod touch is playing a great role in this pre-pilot intervention for teachers' professional development. As one of our respondents said:

> We get ideas about the methods used in the lesson from the iPod. We also understand the teaching style and get the *classroom language* from here. [1.11]

Pre-loaded audio-visual materials provided them with English classroom language to practise communicative language techniques in their lessons. Materials on the iPod Touch, especially audios and videos, are impacting on teachers' personal and professional development. As one of the teachers said about how it is helping him to practice pedagogies in their classrooms:

> A complete lesson on choral dialogue is demonstrated in the iPod Touch. Watching that demonstration we've learned many aspects of choral dialogue such as style, rules etc. The demonstration contains both audio and video. [1.12]

The teachers learned pedagogical techniques of choral dialogue to involve a large class in practicing English language. One of the respondents said how the materials on the iPod have advantages over printed materials:

> After having a long day at school, we do not have the energy to read books. I mean, we lose interest for reading books that merely contains texts. Also the books we need to read for English lesson would be in English that I might feel is not easy to read. On the other hand, the iPod is a new device that creates interest. Moreover, I like to listen to the iPod as it is easy to listen rather than reading from a book. So it is more fruitful for me. [1.13]

The iPod, as a new device, gets the attention of the teachers and it also provides an alternative for them to reading a textbook after a long working day. The hand-held mobile device has given the teachers the freedom to use the resources in different ways suitable for them:

> I use the iPod like a CD player. I run a module and listen to it while working at home, just like listening to music. [2.25]

The iPod Touch works as a multimedia player for the teachers. They use it even while they were working at home at a time convenient to them: a "tutorial in their pocket". It provides the opportunity which enriches their learning language and understanding pedagogical techniques for classroom practice.

The audio files of recited poems provided a particular opportunity for teachers' to follow and learn from them.

> The poems are more helpful. These are pronounced more steadily and clearly, so I do not need to look at the text. [9.29]

> Whenever I listen to an audio or watch a video clip in the iPod, I listen to the pronunciation of each and every word and copy accordingly. I practise repeatedly so that my pronunciation becomes accurate. [3.28]

Listening to the poems was very helpful for the teachers even without reading from the textbook. The quality of recorded poems was very good and pronunciation was particularly clear and steady.

> I watch the video that contains class instructions very often on the iPod. I try to follow the instructions given in the video. I try to follow the pronunciation and try to pronounce accordingly. And if I find any error in my pronunciation, I try to correct myself by listening repeatedly to the instructions. [2.27]

Video instructions were very helpful for the teachers as they can watch video clips on the iPod touch and follow the instruction and pronunciation of particular English words. That also provides them with the opportunity to listen again and again to correct their pronunciation. The iPod provided the scope for the teacher to improve their listening and speaking skills even when they were on the move.

> I listen to the song using the iPod in the morning when I come to the school and in the afternoon on the way back to home from school. [9.28]

> I usually use the iPod when I am free during school hours or on they way to and from the school or in the house. I use it as often as I get free time. [3.9]

The iPod as a mobile handheld device provided freedom for teachers to use it at any time, anywhere. Therefore it speeded up their learning.

> Now I can learn by myself. Without an iPod the pace of learning could be much slower. We've been studying English for my whole life. But I did not know that English can be understood and learned in the way where different resources on an iPod touch and the support systems work together. [3.16]

Audio-visual resources provided opportunities for teachers to learn and understand pedagogies for classroom use.

> I learned how the teacher is using gesture, how he is making gesture effective. I also learned how the teacher is making the class more effective by involving all the students. Had I not been given the video and audio, I would definitely miss learning of these techniques. [4.23]

It is obvious here that teachers learn how to use gesture in their classroom lessons and how to make lessons more attractive and effective involving the whole

class. As we see, video clips of good practice in classroom impact on teachers' understanding of teaching and learning and communicative and participatory approaches in the classroom.

> I like the teachers in the video on the iPod. In my class, I try to follow the things of the teachers that I like. [2.34]

> I try to follow more or less the style of the teacher whom I liked best [from the video clips]. [9.25]

From the micro-teaching videos, teachers learned a lot as they did not have access to any formal professional training. These audio and video resources were enormously useful and beneficiary for teachers in working under such great resource constraints.

> Without video it would have been very difficult initially to understand activities of students and teachers in the classroom and how teachers are using gesture, which gesture students are picking up rapidly, continuity of lessons and how to use the devices and so on. And audio is helping me to understand when to give which instructions, which dialogue or instruction to be used so that students can pick up rapidly etc. [6.38]

Teachers are also influenced by good teaching practice and classroom behaviours demonstrated in audio-visual materials in the iPod Touch.

> For example, I like their [teachers on the video materials] teaching style, gesture very much and I use those in my class. I also try to follow their 'going to pairs', movement routine. I do it because I think a teacher is the idol to be followed for students. So the teacher must represent herself in a way so that they can learn something. Therefore, I try to follow the appearance, behaviour, the speaking style of the teachers from the video. [2.36]

This technology enhanced learning provided teachers with the opportunity to learn from best practice micro-teaching techniques.

> Previously, we just read and the kids weren't listening like they are listening now. When I use the iPod, they become very interested and try to listen. And if we make the new words and keywords clear to them, they very much enjoy the listening. They got attracted to it. And if they understand, they become excited and keen to answer. I liked the technique very much. [9.39]

Using new technology in classroom, lessons became more interesting for the students. The students enjoy listening to the device and get involved with teaching and learning.

> The iPod contains correct pronunciation of the words which I can follow. Now I can teach the students using a new method instead of traditional methods by selecting from a set of methods given in the iPod. It's also helping the students to increase their listening skill significantly. Because when they listen to the iPod they are not using their books. Previously, I used to teach them just using text books. [4.16]

The iPod as a new mobile technology helped both teachers and students to acquire and develop language skills.

> When I read the book, sometimes I hesitate about the exact pronunciation of some words. Then I correct my pronunciation by using the particular lesson from the iPod. [4.17]

This handheld device with resources supplemented teachers learning from the text books especially in the language skills such as listening and speaking. One of the participants make it clear that watching a video clip is more effective then listening to an audio file:

> When I watch the videos, in most cases, I specially see how teachers are involving all the students in the class or how he is using gesture. In the cluster meetings we get resources, learn methods and how to conduct classes. I think watching is more effective than listening. For example, watching a movie is more effective than just listening to the story. Similarly, when I am watching a video of the classroom practice instead of listening only, it becomes more effective. [4.19]

Video resource on the iPod made it easier for teachers to follow instructions, understand teaching learning techniques to make learning interesting and enjoyable.

> If we were given printed books only, first I would miss listening. Because I could only read from a book, not listen. Hence I could not learn the correct pronunciation which in turn could disadvantage the students in developing their listening ability. [4.21]

As a multimedia player, the iPod has contributed to students' motivation during the lessons.

> Actually, the materials which are in the iPod are more effective indeed. Students' response is lower in the lessons we do without the iPod. [7.38]

This observation by a teacher is indicative that the iPod touch increased responses from the students as well.

Building confidence in using English in the classroom

It is essential for the teachers to build their confidence in using English in the classroom. Poor English language proficiency and lack of confidence to speak in English are the main barriers for most of the Bangladeshi secondary school teachers. The EIA STLP has created an environment for developing their English language skills as well as building confidence in using them in the classroom.

> At the beginning of the intervention, I used to speak Bangla along with English. Now I think, most of the students understand instructions in English. If I speak Bangla along with English, probably student's enthusiasm and attraction to learn English will reduce. At the beginning, I tried to explain in English as much as I could, sometimes with gesture. When I failed to explain [meaning of words in English], only then I spoke in Bangla. But now I feel my students can understand instructions in English. I do not need to use Bangla any more for instructing my students. [4.4]

Teachers were given freedom to use both Bangla and English languages in the classroom, whichever they feel comfortable with to deliver the lesson to the students and instructed to increase use of English gradually over the time. The iPod has a huge impact on teachers' personal language skills development especially in correction of pronunciation and grammatical structures.

> When I recite poems in the classroom which is not in the iPod, I try to make the pronunciation as close to that as possible. And if the listening item is available on the iPod, then I use that so that students can learn pronunciation properly. [2.32]

In a way the iPod is providing open and distance learning for students as well as their teacher in relation to practicing English language. This mobile device creates space for them to develop their language skills. Over time they managed to increase English language proficiency among the students as well as their own.

> For example, the classroom language we are applying contains some easy words which we are learning and delivering to the students very easily. ... Even the students are easily guessing what we wanted to say or what we are saying. They are learning quite easily. [3.11]

Providing open educational resources on the iPod made learning happen because of the accessibility of the resources.

> Previously, I used to tell them the Bangla meaning very quickly. I used to write them on the blackboard and they took note. But after listening and watching those iPod lessons, I am avoiding those practices. English in Action methods are helping me to increase the student's response, to increase active participation with the kids in the class. [3.15]

Building confidence in using English in the classroom is one of the positive outcomes of the teacher development activities while the 'teacher guide' and 'peer support' are probably factors that contributed significantly to the success of the intervention.

Learning and adaptation strategies

Professional knowledge, understanding and skills of teachers are continuously reinforced by the support model and pattern of the EIA intervention. As a result, TPD is happening along with changes in classroom practice. It is indicative here through teachers' interpretation of the support model:

> We are having cluster meetings, getting ideas on different modules from the teacher guide. Then we are coming back to the schools and working on them. TDCs [Teacher Development Coordinators] are visiting and following up our work, discussing problems of each teacher. Again, TDCs are discussing the problems in the following cluster meeting and we came back to school with some concepts and techniques from them and we are then trying to implement those in our classroom practice. With all these helpful inputs, we are trying to correcting our faults gradually day by day. [1.23]

Referring to the cluster meeting one of the respondent teachers said:

> It makes everything crystal clear. It helps me to understand. In the practical classes we are presenting in a group. TDCs are showing us our fault and tell us how to do that properly. Or, sometimes we were split in four groups. One group performs worse than another. Seeing that we can find where they lack. Or, on the other hand one group is doing better and we understand how they are doing better. [9.41]

Referring to the Communicative Language Teaching techniques introduced by EIA STLP, one of our respondents said that:

> I myself enjoying it and so do my students! [6.63]

By attending a cluster meeting, and watching good practice video clips from the iPod, teachers are also using body language during their lessons to develop understanding of English as well as making sense of their lessons.

Now we are not conducting our class the way we did earlier. We have changed it. [7.54] Now, probably we are more active and our students are too. [7.55]

After going through the training process teachers are now thinking about how the teaching process can be made more enjoyable, rather than merely a one of simply 'delivery of content'.

Impact of school-based technology enhanced support
During the pre-pilot phase we have seen a huge impact of the EIA intervention on the UCEP teachers. They have been making a significant development in their practices within a very short period of time. After only four months, in response to our question about classroom practice, participant teachers said that:

For example, the way I conducted the class today, I never did it earlier. We never used choral dialogue, at least not following its structure. Now we can use the structure because we learned it from there (cluster meeting). [1.19]

It helps me to learn how I can make students more engaged, how they can speak more or be more active in the class, how I can make all students active in the class by beginning lesson by drawing little pictures or playing small games and so on. [6.51]

I learned these techniques solely from EIA. I learned it from the demonstration class or the representative there. What acts are identified as not so effective.... [6.52]

By making their classroom participatory and engaging, teachers have seen that they are now having an influence on students learning more easily.

Effectiveness of EIA support systems
The support systems are a key feature of the EIA secondary teaching and learning programme which includes an orientation workshop, cluster meetings, peer support, school visits and feedback. This was also seen and recognised by many teachers participated in this study. The support systems are an integral part of effective school-based training, as the participant teachers said:

In fact these things [support systems] are like different parts of the same body. One is related to another. i.e. the body is not complete without any parts missing. [9.35]

The school-based support systems are definitely helping the teachers in their professional development, especially in personal development in English, teaching development and classroom teaching development.

Training without support is like a paddy field without water. In a paddy field, water is the support. It helps the paddy to grow properly. If it grows properly, it will produce rice. If there is no support, then there will be no result. [9.62]

All these [support systems] are important. Each support system has its own importance. Pair work and cluster meeting have their importance. School visit followed by feedback is very effective. I am getting much input from there. [3.17]

Lessons learnt from the pre-pilot UCEP Intervention
A key to successful educational change is the provision of appropriate mechanisms and 'incentives' for teachers in their contexts to improve their practice in the classroom. But it is also true that many features of the school system are maintained and supported by the institutional culture and socio-political context of the school

(Shohel and Howes 2008). EIA as a major educational development programme in Bangladesh is creating a space for teachers to raise their voice and to be empowered in their professional context. Therefore, any educational intervention needs to be clear about what it can offer to the teachers as incentives for being an active teacher participant apart from training and technological tools.

In the case of UCEP schools, teachers are overloaded by duties including delivering 5 to 6 lessons per day in 3 shifts schooling and following up 10 to 15 students per month as part of the social support of their under-privileged students.

> Everyday I have to conduct three English lessons. If there are 30 working days, I have to plan 60 lessons, which is quite a heavy load for me, surely a burden on me. [1.24]

> I feel a bit over-loaded. Previously we were taking 6 classes in the traditional way. Now we are taking three of them using the EIA method and after these three I feel like I am finished. But I still like EIA training. [2.47]

Though the teachers enjoy taking part in EIA intervention, it is very demanding for their time. Eventually they are getting used to the training activities and practicing their learning in schools.

If the school achievement levels are to rise up to a certain standard then appropriate teacher education and training must be available for all teachers. It seems clear that there should be some sort of school-based professional development programme through technology enhanced learning such as multi-media player. Children's 'cognitive achievement […] increases as school expenditure, teacher education and school facilities are enhanced' (UNESCO 2005, 228). Therefore, Bangladesh needs to invest more on education including school-based technology enhanced teacher training, to provide quality education for its citizens.

In the context of Bangladeshi educational culture where education is seen as 'simple memorisation for an examination by both teachers and parents' (Banks 2009, 7) it is very difficult to bring changes in practice without making changes in policy and curriculum. As an emergent economy, 'the relevance of education to everyday life is paramount' (Banks 2009, 7) in Bangladesh. So Bangladesh needs to focus on these issues to achieve the EFA and MDGs targets as well as strengthening its economy by developing its human resources. The lessons learned in Bangladesh can be adapted to language education in both global southern and northern countries alike.

Implications for teacher education and training
General concern and trends around teacher education and training relate to 'the resolution of the balance between theory and practice; the attempts to match the demand for and supply of teachers; the degree of central control of teacher education; the status, recruitment and output of teachers' (Morris and Williamson 2000, 281). Successful teacher education and training could happen in the context of the school, though there is no earlier evidence of this happening in resource-constrained contexts. Considering the urgency of teacher education and training, TPD should be school-based and it is essential to provide a stable policy basis for development.

> 'Training models for teachers should be reconsidered in many countries to strengthen the school-based pre- and in-service training rather than rely on lengthy traditional, institutional pre-service training' (UNESCO 2005, 3).

For doing so, school-based teachers professional development through technology enhanced learning is the only viable way forward (Banks et al, 2009).

'Increasingly new modes of open and distance learning, including new information and communication technology application are seen as vital to new approaches to training provision on a large scale' (UNESCO 2008, 2). School-based modes of supported ODL, exploring ICTs are the only feasible way to make such provision widely available.

Conclusion

Bangladeshi English language teachers need school-based professional support in developing their own English language and teaching skills (Shohel and Power 2010). According to the EFA Global Monitoring Report 2005 (UNESCO 2005, 229), 'Teachers' subject mastery and verbal skills, their expectations of students and their own passion for learning are significant factors for school quality'. Teachers are increasingly expected to be life-long, autonomous, and self-regulated learners with the ability to adapt readily to changing circumstances (Fullan 2007; Triggs and John 2004; McCormik and Scrimshaw 2001). Investment in high quality training programme design and implementation is necessary to realise the potential of new models of TPD programmes such as the English in Action Secondary Teaching and Learning Programme.

Mobile technologies have considerable potential to enhance teaching and learning across all sectors of education. The mobile devices being pocket sized and battery powered provides an easily accessible source of learning. The use of mobile technologies improves educational outcomes in increasing access and promoting new learning through changes in the 'contextualised, situated, constructive and collaborative learning' (Valk, Rashid and Elder 2010). Introducing new technologies in education has shown that the accessibility of hardware and software as well as courseware to individuals in their communities or in their homes has been the major factor in supporting change for new pedagogic developments. Now mobile devices such as iPods are much more likely to be used and to be successful (Shohel and Power 2010) though 'a mobile device does not necessarily replace existing technologies such as desktop computers, pens, papers and printed books; often it may complement them by providing something additional' (Kukulska-Hulme 2010).

This paper also argues that teachers need support to ensure the authenticity of the context to work to confirm the teachers' work, however economically or philosophically challenging this will be. The scope and size of the proposed changes must challenge and intrigue without overwhelming teachers (Brownell et all 1999; Ros and van den Berg, 1999). In this way the teacher can determine whether the practices are effective, and are likely to change. Change requires teachers to be involved in the teaching practices and reflecting a desire to change their current teaching status. You have to want to continue to learn about learning, and see themselves as the dynamic of change (Kent 2004). Instructional change must be incremental and specific. Teachers need concrete, practical suggestions to understand how to make changes (Fountas et al 2000). But it is an inner desire for new strategies and practices that support the start of a successful innovation change.

The status of teachers in the community and the professional world and their participation in the development and implementation are just as important as their academic qualifications and training. Countries that have good performance in the provision of quality education for its citizens put a high value on teacher training and CPD as well as social networking (UNESCO 2005). Teachers enjoy a high status in these countries.

The increasing power, affordability and availability of mobile technologies can be harnessed to enhance effective language learning activities in the English language classroom in Bangladeshi secondary schools. The English in Action (EIA) technology enhanced teaching and learning intervention shows that Bangladesh could be developed from its current low quality teaching by putting resources in place through 'short term interventions completed by longer term institutionalisation and sustainable societal interaction' (Yates 2007,12). That will ensure the continuity of quality education which English in Action is aiming for.

Acknowledgement

Reference

Banks, F., B. Moon, and F. Wolfenden. 2009. New modes of communication technologies and the reform of open and distance learning programmes: A response to the global crisis in teacher education and training. Paper presented at the 23rd ICDE World Conference on Open and Distance Learning, June 8-10, in Maastricht, The Netherlands.

Banks, F. 2009. Technological literacy in a developing world context: The case of Bangladesh. Paper presented at the PATT-22: 'Pupils Attitude Towards Technology' Conference, August 24-28, in Delft, Netherlands.

Brownell, M., D. Ross, P. Sindelar, and P. Vandiver. 1999. Research from professional development schools: Can we live up to the potential? *Peabody Journal of Education,* 74(3/4): 209-224.

Burke, C., J. C. Harste, and K. G. Short. 1996. *Creating classrooms for authors and inquirers.* Portsmouth, Heinemann.

Castellano, M., and A. Datnow. 2000. Teachers' responses to success for all: How beliefs, experiences, and adaptations shape implementation. *American Educational Research Journal,* 37(3): 775-799.

English in Action. 2009a. *An observation study of English lessons in primary and secondary schools in Bangladesh* (Baseline study- 3). Dhaka: English in Action.

English in Action. 2009b. *The technology environment in Bangladesh* (Baseline study- 6). Dhaka: English in Action.

Fountas, I. C., A. McCarrier, and G. S. Pinnell. 2000. *Interactive writing: How language and literacy come together, K-2.* Portsmouth, Heinemann.

Fullan, M. 2007. The new meaning of educational change. New York, Teachers College Press.

Gaskell, A., and R. Mills. 2010. Can we really learn from mobile handheld devices? Paper presented at the Pan-Commonwealth Forum on Open and Distance Learning, Cochin, India.

Glaser, B. G., and A. L. Strauss. 1967. *The discovery of grounded theory: Strategies for qualitative research.* Chicago, Aldine Publishing Company.

Global Campaign for Education. 2006. *Teachers for all: What governments and donors should do.*

Hassel, E. 1999. *Professional development: Learning from the best.* Oak Brook, North Central Regional Educational Laboratory.

Hurst, B. 1999. Process of change in reading instruction: A model of transition. *Reading Horizons,* 39(4): 237-255.

Hutchens, J. 1998. Research and professional development collaborations among university faculty and education practitioners. *Arts Education and Policy Review,* 99(5): 35-41.

Kennedy, C., and J. Kennedy. 1996. Teacher attitudes and change implementation, *System,* 24(3): 351-360.

Kent, A. M. 2004. Improving teacher quality through professional development, *Education,* 124(3): 427-435.

Kukulska-Hulme, A. 2010. Mobile learning as a catalyst for change. *Open Learning,* 25(3): 179-180.

Laine, S. W. M., and C. Otto. 2000. *Professional development in education and the private sector: Following the leaders.* Oak Brook, North Central Regional Educational Laboratory.

McCormick, R., and P. Scrimshaw. 2001. Information and communications technology, knowledge and pedagogy. *Education, Communication & Information,* 1(1): 39-57.

Moon, B. 2000. The open learning environment: A new paradigm for international developments in teacher education. In *The Routledge International Companion to Education,* ed B. Moon, S. Brown, and M. Ben-Peretz, London: Routledge.

Moon, B. 2007. *Research analysis: Attracting, developing and retaining effective teachers: A global overview of current policies and practices.* Paris: UNESCO.

Morris, P., and J. Williamson, (eds) 2000. *Teacher education in the Asia-Pacific region: A comparative Study.* London: Falmer Press.

Nelson Mandela Foundation. 2005. *Emerging voices: A report on education in South African rural communities.* Houghton: Nelson Mandela Foundation.

Pouezevara, S. L., and R. Khan. 2007. *Learning communities enabled by mobile technology: A case study of school-based in-service secondary teacher training in rural Bangladesh,* Research Triangle Park: RTI International.

Shohel, M. M. C., and A. J. Howes. 2008. Informality of teaching and learning in nonformal schools: Sociocultural processes as mesosystems of student development. *Education 3-13*, 36(3): 293-309.

Shohel, M. M. C., and F. Banks. 2010. Teachers' professional development through the English in Action Secondary Teaching and Learning Programme in Bangladesh: experience from the UCEP schools. *Procedia Social and Behavioral Sciences*, 2(2):5843–5494.

Shohel, M. M. C., and T. Power. 2010. Introducing mobile technology for enhancing teaching and learning in Bangladesh: Teacher perspectives, *Open Learning* 25(3):201-215.

Strauss, A., and J. Corbin. 1990. *Basics of qualitative research: Grounded theory procedures and techniques.* Newbury Park: Sage Publications.

Triggs, P., and P. John. 2004. From transaction to transformation: Information and communication technology, professional development and the formation of communities of practice. *Journal of Computer Assisted Learning,* 20(6): 426-439.

Underprivileged Children's Educational Programs (UCEP). 2008. *Transforming underprivileged children into productive human resource*. http://www.ucepbd.org/index.htm (accessed 29 June 2009)

UNESCO Institute for Statistics (UIS). 2006. *Teachers and educational quality: Monitoring global needs for 2015*. Montreal: UNESCO Institute for Statistics.

UNESCO. 2005. *Education for All: The quality imperative (Summary)*. EFA Global Monitoring Report. Paris: UNESCO.

UNESCO. 2005. *Towards EFA: The quality imperative* (EFA Global Monitoring Report 2005). Paris: UNESCO.

UNESCO. 2008. *Supply, retention, preparation and career long professional development of teachers in E9 countries*. Paris: UNESCO.

Valk, J-H., A. Rashid, and L. Elder. 2010. Using mobile phones to improve educational outcomes: An analysis of evidence from Asia. *IRRODL,* 11(1): 117-140.

Watabe, K., B. Collins, P. Devries, and F. Vozelzay. 1995. An internet based collaborative distance learning system: CODILESS, *Computers in Education,* 24(3): 141-155.

Yates, C. 2007. *Teacher education policy: International development discourses and the development of teacher education*. Paris: UNESCO.