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Teacher professional development using mobile technologies in a large-scale project: lessons learned from Bangladesh

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Teacher Professional Development Using Mobile Technologies in a Large-Scale Project:
Lessons Learned from Bangladesh

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ABSTRACT

Mobile technologies have been influencing the field of education including language learning for almost a decade. The literature on mobile technologies for education reports a number of case studies that examine various aspects of mobile learning. However, the use of mobile technologies for teacher professional development, particularly in developing economies, is rarely reported. This paper presents a case study of the English in Action (EIA) project, a UK government funded English language development project in Bangladesh, and its use of mobile technologies which not only provides teachers with the 'trainer in the pocket' that helps them achieve pedagogical changes in the classroom but also serves as a tool for improving their own English language competence. The paper, in particular, reports on the design and implementation of audio and video teacher professional development materials for MP3 players and mobile phones. It also highlights implications for similar projects intending to deploy mobile technologies.

Keywords: Communicative Language Teaching (CLT), English in Action (EIA), Mobile Phones, MP3 Players, Teacher Professional Development

INTRODUCTION

Information and communication technologies (ICTs) have been employed in language education since the 1950s (Beatty, 2010) and are increasingly found not only in developed but also in developing countries. More recently, mobile technologies such as MP3 players and mobile phones are also reported to have been used for language education. In recent years, mobile technologies have served as tools in the context of English language teaching (ELT) as well. However, the literature regarding mobile technologies and ELT seems to have focused on the developed economies, and studies on the use of such technologies for teacher profes-

sional development is extremely limited. Even though there are a number of studies reported in this area in the context of developing countries, they tend to be small-scale studies. In order to redress this, this article reports on a UK government-funded large-scale English language teacher professional development project in Bangladesh.

The main aim of this paper is to report on how a large-scale English language teacher professional development project successfully carried out its activities deploying mobile technologies in a developing economy. In this regard, first of all, I will review the literature on ELT and mobile technologies. I will, then, briefly describe the landscape of mobile technologies in Bangladesh. The rest of the paper will explain how the large-scale project called English in Action (EIA) has conducted mobile technology-enhanced teacher professional development. This explanation is informed by EIA's three years' robust research and development work. Finally, I will present implications of this project for similar projects intending to deploy mobile technologies.

ENGLISH LANGUAGE LEARNING AND MOBILE TECHNOLOGIES

English language learning and teaching methodology has undergone many changes over the last four decades: moving from a traditional grammar-translation method to more student-centred methods such as Total Physical Response, Communicative Language Teaching (CLT) and Task-Based Learning, which are more popular among language teachers (see Richards & Rogers, 2001, for an overview). CLT, in particular, appears to be appealing to many teachers. Although teachers from different parts of the world have viewed and practised CLT differently, it is widespread in the ELT world. In addition to the student-centredness of this method, communication (and hence meaning) is at its heart. In fact, CLT is all about developing learners' *communicative competence* in a

target language (see Folse, 2010, for a review). Communicative competence refers to a user's ability to use the language observing appropriate linguistic (e.g., tone, pronunciation) and non-linguistic (e.g., politeness) features while communicating a message to other users of the same language (Hymes, 1972). Following this notion, CLT classroom activities are developed by drawing on real life communication (e.g., giving directions meaningfully to a tourist), which focuses on meaning making in a social context rather than learning about grammar (for a recent review, see Littlewood, 2007).

A recent surge in the use of ICTs is having an impact on how English and other languages are taught and learned (see, for example, Beatty, 2010; Levy & Stockwell, 2006). The value of ICTs for language learning is widely accepted, albeit in some cases with caution (Warschauer & Ware, 2008). In the context of developing countries, ICTs are often seen as an empowering tool that provides people with access to opportunities and choices that were hitherto not available. Mobile technologies, particularly mobile phones, for English language teaching and learning are still an emerging field in developing countries (e.g., Shrestha, 2011). However, studies in developing and developed countries do offer evidence of mobile phones' impact across various global contexts in regards to the aforementioned fields as well as other areas of development. There are many remarkable case studies outside education that highlight the efficacy of mobile phones for young peoples' participation in a radio discussion in Nepal (Ulbricht, 2010); entrepreneurial activity among women in Bangladesh (Sullivan, 2007); economic development in relation to microenterprises in Rwanda (Donner, 2007); and activism (see www.mobileactive.org) in developing countries. Of key importance to the Bangladeshi ELT community is leveraging the power of mobile phones, in similar ways, to provide opportunities to English language learners and potentially enhance English language teachers' professional development.

Mobile technologies have already begun to change the landscape of language learning

in the developed countries (see, for example, Kukulska-Hulme, 2009). Unlike tethered technologies, mobile technologies offer learners more flexibility and mobility with regard to accessing language learning resources. For example, the learner does not have to be in one particular place. More importantly, mobile technologies break the barrier of distance between the teacher and the learner (Beckmann, 2010). Given the rapid growth of users of mobile devices such as mobile phones and media players in developing countries such as Bangladesh, the prospect of mobile technologies for language learning has increased over the last ten years. In fact, a few publications have already reported the fruitfulness of mobile technologies including mobile phones for both English language learners and teachers in Bangladesh (Power & Shrestha, 2010; Walsh, Shrestha, & Hedges, 2011).

MOBILE TECHNOLOGIES IN BANGLADESH

The use of mobile technologies has phenomenally increased in Bangladesh over the last ten years. Until about a decade ago, mobile devices such as laptops and mobile phones were seen in the hands of the elite only. This is not the case anymore. In particular, the penetration of mobile phones is remarkable. According to the Bangladesh Telecommunication Regulatory Commission (BTRC, 2012), there were 90.636 million mobile telephone subscribers in April 2012 while the fixed-line subscription seems to be just over 1 million. This is a strong indication of the tremendous popularity of mobile phone use. Such high penetration of mobile phones certainly means more opportunities for learning even when the user is on the move (Kukulska-Hulme, 2009). In 2007-08, tapping into the learning opportunities created by this massive growth in mobile phones and other mobile technologies, the English in Action project was developed for Bangladeshi school teachers and students, and this is described in the upcoming section.

THE ENGLISH IN ACTION (EIA) PROJECT AND MOBILE TECHNOLOGIES

English in Action is a £50 million, 9-year project to help 25 million people in Bangladesh improve their ability to use English language for social and economic purposes, requested by the government of Bangladesh, and funded by Department for International Development, UK. This project has designed and developed teacher professional development activities and resources enhanced by the use of mobile technologies, for use by primary (Grades 1 – 5) and secondary (Grades 6 – 10) school teachers, thereby reaching millions of school children. The project has a consortium of international and national partners. The project is led and managed by BMB Mott McDonald, The Open University (UK) and The British Broadcast Corporation (BBC) Media Action Group. EIA also works collaboratively with local organisations including the Underprivileged Children's Educational Programme (UCEP) and Friends in Village Development Bangladesh (FIVDB). EIA is an innovative project that employs mobile technologies such as iPods, and mobile phones as tools to support and bring about change in ELT classroom practices.

English in Action has three phases of operation:

1. **Developmental Research – Pilot Phase (2008–2011):** This phase was designed to identify the most effective, scalable and sustainable model of supported Open and Distance Learning for English Language Teachers in Bangladesh and the most appropriate forms of mobile technology to support this. The project team worked with over 700 teachers from across Bangladesh, more than 80% of whom are teaching in rural schools.
2. **Upscaling (2011–2014):** This phase of the project, which is currently running, takes the most effective and cost effective model of teacher professional development forward at scale. Working with at least

12,500 teachers from all six Divisions in Bangladesh. 80% of these teachers will be in rural schools.

3. **Embedding or Institutionalisation (2014–2017):** During this phase, the focus of the project will be on institutionalising what the project will have achieved by 2014. In particular, the project will be making the teacher professional development programmes available across Bangladesh, through a locally supported Open and Distance Learning model piloted during the pilot phase. The final phase programme will require Public Private Partnership (PPP) to provide a 'teachers toolkit' of mobile technology, classroom resources, and teacher professional development materials.

THE ELT CONTEXT OF EIA SCHOOLS IN BANGLADESH

Before presenting the teacher professional development activities carried out during the pilot phase, it is important to understand the context of schools in Bangladesh and the state of play with regard to ELT in the country.

Bangladesh is always associated with the mother language movement because the nation was founded on the basis of the language movement (Bhasa Andolon) of 1952. About 98% of the country's population speaks Bangla and the majority of the people (83%) are Muslim (Imam, 2005). It was a British colony until 1947 and was East Pakistan until its independence as Bangladesh in 1971. Soon after this, for obvious reasons, Bangla was the medium of education at all levels except in Madrasah schools and some elitist English-medium schools in the cities (see Hossain & Tollefson, 2007, for language-in-education policies in Bangladesh).

However, as English gradually gained ascendency as a global language (Graddol, 2006), it has come back as an economically valuable language in Bangladesh, though, in some quarters, it may still be seen as a colonial language and a potential threat to Bangla and the local culture (Imam, 2005).

English, however, is now a compulsory subject (though see Hossain & Tollefson, 2007, p. 252) throughout school education. As in other developing economies (see, for example, Littlewood, 2007), the Bangladesh government has taken English language teacher training initiatives to improve the profile of English in the country and prepare a workforce that is able to fully participate in the global economy. In this sense, English language competence is associated with 'development'. Yet despite this, and the investments made by the government and the funding agencies such as DFID and the World Bank, the level of competence among students and their teachers is often low. Although Bangladesh has already started using CLT as an ELT methodology, producing textbooks and training teachers in this methodological style, the actual implementation of CLT is found to be less than satisfactory. For example, the Teaching Quality Improvement (TQI) study showed that classroom practice in ELT is still traditional grammar-translation method (TQI-SEP, 2007). This is confirmed by other researchers in Bangladesh (e.g., Chowdhury & Le Ha, 2008; Hamid & Baldauf, 2008).

Prior to the implementation of the Pilot phase of the EIA project, the project also conducted a number of Baseline Studies to understand the existing ELT situation in the country in 2008. One study (EIA, 2009b) examined the existing classroom practices through classroom observations. In total, 252 English language lessons in primary and secondary schools were observed in various parts of Bangladesh. The classroom observation included 90 primary and 162 secondary English language lessons. This study (EIA, 2009b) showed that the English language teachers observed mostly taught from the book or the chalkboard, standing in front of the classroom without moving around the classroom. Approximately 67% of them used more Bangla than English in their lessons and asked closed questions only. More significantly, only a small proportion of the students in these

lessons (23%) had a small opportunity to speak in English during the lesson. Overall, these lessons indicated that the observed teachers did not follow a communicative approach but a more traditional approach in which the teacher normally focused on grammar rules, memorisation and translation. The study speculated that this may be due to their proficiency in English language. In fact, another Baseline Study by EIA (2009a) which examined 220 teachers' English language proficiency through oral tests (Graded Examinations in Spoken English, GESE) conducted by Trinity College London suggested that 69% of them were at A1 and A2 levels in the Common European Framework of References (CEFR; CoE, 2001). (http://www.coe.int/t/dg4/linguistic/cadre_en.asp for level descriptors) whereas the level of the primary English language textbooks was up to B1. This mismatch indicates that these teachers would not be able to use English language to teach at B1 level. This means these teachers not only needed teacher professional development but also English language development that posed a huge challenge to the project. Therefore, the project team had to develop teacher professional development materials and provide support to address these two areas.

It is not possible to report on all the aspects of the project in this article given its focus on the use of mobile technologies for teacher professional development. Therefore, only aspects directly related to this area will be reported.

TEACHER PROFESSIONAL DEVELOPMENT IN THE PILOT PHASE

The Pilot phase provided an opportunity to trial the teacher professional development materials and the support model in both primary and secondary schools in Bangladesh. For this, a number of teaching and learning materials were designed in response to the findings of the baseline studies and trialled in schools from February 2010. These materials were developed differently for primary and secondary school teachers although the support model was similar. The materials consisted of both audio-video and print-based content.

Prior to this pilot, a pre-pilot was run from August 2009 for six months with 32 secondary school teachers from schools run by UCEP, a non-governmental organisation in Dhaka. This provided a test-bed for the main pilot. This pre-pilot indicated that mobile technologies (particularly MP3 players) were effective in providing film and audio-based learning opportunities to English teachers who previously had limited or no access to this kind of professional development and support. Assuming that these teachers would find the use of a media player such as an iPod relatively easy, for the pilot test, iPods were chosen over other mobile devices such as a basic MP3 player or a more sophisticated one such as iRiver. Although iPods were more expensive than other devices, iPods were used because they were simple to use and had more functionality than others at the time.

Each secondary teacher was given an iPod Touch (Apple) with teacher professional development resources, while each primary teacher was provided with an iPod Nano (Apple) with the audio materials for classroom use. In addition, they were also given a portable speaker (LogiTech) that could be recharged (£60). Each participating school also received a large rechargeable Block Rocker speaker (£140), which field-testing proved to be too big and difficult to recharge in schools with no electricity. These mobile devices contained audio materials to enhance ELT classroom teaching as well as vod and podcasts for teacher professional development. Whilst the classroom resources were mainly audio-based, designed around the existing school curriculum and supported by print materials such as posters and flashcards, the teacher professional development materials contained audio and video materials modelled and/or focused on certain techniques and pedagogical practices that incorporate CLT principles such as integration of language skills and grammar in context.

Primary Materials

The English language materials for primary school teachers focused on the classroom materials more than teacher professional development materials. The rationale behind this is on the premise that primary teachers needed more scaffolding in terms of using their English language textbooks called *English for Today* (EfT), which follow the national curriculum. Therefore, the project team designed and developed bilingual (i.e., English and Bangla) audio and print-based materials for classroom use. These materials were specific to each of the five grades in the primary level.

Given that the project focused more on classroom materials for the primary sector, which were mainly audio, iPod Nanos (8GB 4th Generation) were selected for this purpose. They could still display videos and pictures though the screen was small. The materials contained audio recordings of the existing English textbooks and a set of activities to supplement all units in the national textbook, *English for Today,* for Grades 1 to 5.

Secondary Materials

The secondary materials mainly consisted of teacher professional development materials unlike the primary materials. They were designed to raise teachers' awareness about CLT techniques under different themes as shown in Table 1. The purpose of these materials was not only enhancing teachers' professional development but also activating their potentially fossilised English language skills (see Fidler, 2006, for a review of language fossilisation). But the materials also included audio recordings of 'listening' texts, dialogues, stories, poems and plays from the *English for Today* textbooks from Grades 6 through 10. These audio recordings were for classroom use with students. The main teacher professional development materials were divided into 12 modules as shown in Table 1.

All secondary materials including these 12 modules were supplied to 232 secondary school English language teachers on a second generation iPod Touch (8GB). Materials including the mobile devices were distributed through an initial teacher workshop in various parts of the country.

Each module contained a sequence of teacher development activities using print, audio and video. The print materials and the expository parts of the audio were in English, in order to provide language improvement, but the audio materials also featured conversations in Bangla. These features ensured that key ideas were reinforced through different media and languages. The video materials included real classroom lessons being conducted by Bangladeshi teachers in Bangladeshi classrooms. The bigger screen of the iPod Touch allowed the teachers to watch the videos that showed the implementation of the key principles discussed in each of the 12 modules.

Teacher Support Model

The EIA adopted a school-based teacher support model. In this model, the teacher is provided professional development support in the work place through various ways. Although the initial professional development activity for each teacher starts from a workshop away from school, the most significant part of their professional development activity takes place at school. First of all, they have all the professional development materials on the iPod which is called 'trainer in the pocket' because it is always in the teacher's 'pocket' and is accessible any time they want. Next, each teacher is paired up with another teacher within their own school, thus providing peer support and learning opportunities. This means they do not have to constantly rely on somebody else from outside the school. Another form of support is provided through mentoring by a Teacher Facilitator (TF) who is also a practising teacher in the Upazilla (a smaller administrative region than district). Each teacher's lesson is observed by a TF every month and the teacher is provided with constructive feedback. Additionally, there is a monthly cluster meeting run by a TF and a Teacher Development Coordinator, where teachers share their experience of using EIA

Table 1. Secondary teacher professional development modules

Module	Key points
1. Active listening	• elicitation techniques • stages of a listening lesson
2. Choral dialogues	• scaffolding students • setting up pair work
3. Listening and responding	• active involvement • different learning styles
4. Information gaps	• creating an information gap • authenticity
5. Pronunciation practice	• sounds, stress and rhythm • pronunciation models
6. Predictive listening	• elicitation techniques • creativity
7. Roleplay	• using dialogues • pair work and group work
8. Songs for language practice	• automatisation • grammar integration
9. Using visuals	• classroom interaction • skills integration
10. Creative writing	• Personalization and creativity • stages of a writing lesson
11. Listening to the world	• real-life purposes • listening for gist/key points
12. Grammar games	• grammar integration • motivation

materials and technological tools and address any emerging issues. They also prepare for the subsequent month as to what aspects of professional development they need to focus on. Any technical issues related to the mobile devices are dealt with either at the cluster meeting among themselves or by the technical team based in Dhaka, the capital of the country. These issues are often addressed on the phone. Most importantly, the head teachers of the participating schools are involved in the project as one of the key stakeholders, which has positively influenced the teacher motivation. In many ways, the model follows The Open University's open and distance learning model in which learning is taken to learners rather than learners coming to learn in an educational centre or institution. The teacher support model is summarised in Figure 1.

RESEARCH FINDINGS FROM THE PILOT PHASE AND DISCUSSION

In this section, I present key findings from a number of EIA research studies. The focus is on the use of mobile technologies for teacher professional development.

Mobile Technologies and Teacher Professional Development

Various studies were carried out during the Pilot phase in order to understand what teachers made use of iPods and speakers they were provided with. The studies were conducted between 2010 and 2011. I report the key findings related to mobile technologies for teacher professional development.

Figure 1. EIA's school-based teacher support model
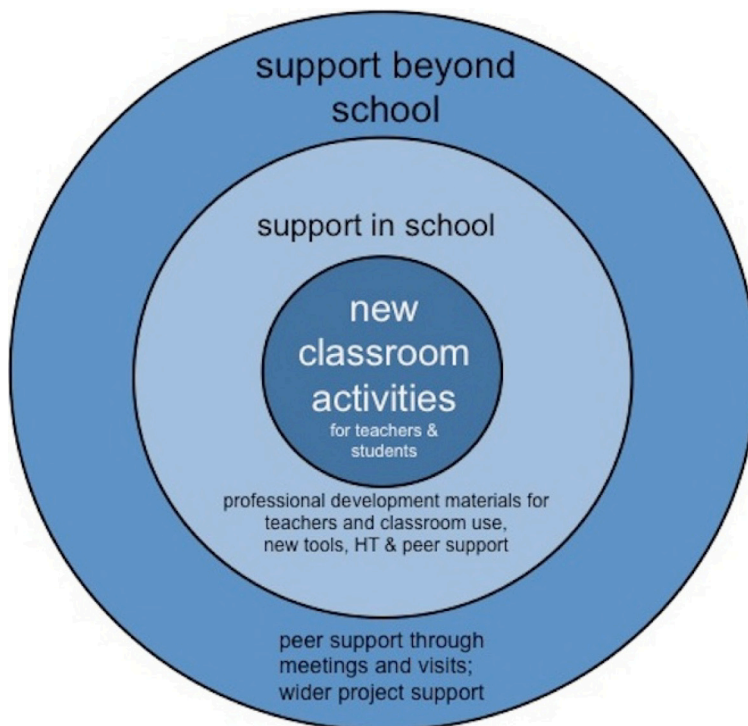
Media Players

A number of research studies were carried out in order to explore the feasibility of the mobile devices used in the EIA project. These studies indicate that both primary and secondary teachers participating in the project found the use of mobile devices (i.e., iPods and portable speakers) an effective tool to both learn about and view CLT practices including developing their own English language skills. Among these studies, EIA (2012) also suggests that there is an increasing use of English in the classroom both by the teacher (75% of the talk time) and the students (83% of their talk time).

A large-scale classroom observation study (EIA, 2012) was conducted towards the end of the Pilot phase. A total of 324 teachers were observed in this study. Out of 324 teachers, 195 were primary and 129 were secondary teachers. The study found that there was evidence of increasing use of English in the classroom by both teachers and their students. For example, the EIA baseline study (EIA, 2009b) indicated very little evidence of English use by both teachers (33% of their talk time) and students (less than 23% of their talk time) in the lesson whereas the 2011 classroom observation study (EIA, 2012) suggested that primary teachers used English 72% and secondary teachers 79% of the time when talking in the lesson. The reason for this increase and teachers' confidence may be related to mobile technology because the audio materials were in English and they were on iPods that teachers could access at any time. This is confirmed by other studies within EIA, which involved investigating teachers' perceptions and motivation regarding the project. For example, a primary teacher summed up the increasing use of English in English lessons in an interview like this (EIA, 2010):

Before [EIA] there was no difference… no distinction… the English class was the same as the Bangla class. If you walked in, you would not have been able to tell which was which. But now we can differentiate… we [the teacher and students] are speaking English much more now… …The students are using English with their families too, outside school… Their pronunciation has improved… they are using English confidently. (Teacher 1)

During interviews, the teachers also reported that the most useful ideas in supporting their learning and pedagogical changes back at school were either (1) the iPod and audio materials or (2) their project partner in school. Taken together, teachers saw these two components as being the core support for their school-based professional development.

The classroom observation study (EIA, 2011a) also showed that teachers used audios in almost in every lesson observed out of 491 lessons. This was more frequent in the primary given that most materials in the primary were for classroom use. It should be noted that the Baseline Study (EIA, 2009b) indicated no evidence of teachers using audio materials or any technologies. The audio materials provided opportunities to students to practise listening skills in English.

Another medium-scale EIA study (2011b) involved exploring perceptions of EIA teachers and their students about their professional development and English language improvement in the project. A survey with 103 primary and 49 secondary teachers and a semi-structured interview with 100 primary and 49 secondary teachers were conducted. The findings suggested that the students enjoyed their English lessons because they were engaged in student-based or 'interesting' activities such as listening to songs and dialogues which they had no access to previously. Teachers confirmed this view when they reported that their students were more motivated to learn English as a result of the introduction of the new technologies and their shifted communicative English

language teaching approach. Several teachers mentioned that their confidence to use English had increased, for example:

My English has improved in some cases as a result of participating in the EIA. My vocabulary has increased. My pronunciation has developed. My confidence level in using English has also developed. (Teacher 2)

Several teachers mentioned that EIA has given them access to a means of learning English that was not available to them before:

Before the EIA training there was no way to learn English. But now I am learning a lot of English from the iPod, activity guide, poster and flash cards. (Teacher 3)

Other teachers note in particular the usefulness of the iPod in helping them to improve their English and, in turn, their teaching of it:

It is a great way to practice accurate pronunciation of English from the iPod. In this way I am changing myself and developing as an English teacher. (Teacher 4)

These comments by the EIA teachers support other studies conducted elsewhere regarding the perception of mobile technologies. For example, Uzunboylu and Ozdamli (2011) conducted a study in Cyprus in which they explored 467 school teachers' perceptions of mobile learning technologies. They reported that teachers saw mobile technologies as complementary tools to make traditional education more effective, a view expressed by many EIA teachers as well.

Mobile Phones

For the second phase of EIA (2011 – 2014), *Upscaling phase*, new technology strategies were developed based on the experience of the Pilot phase. As noted earlier, Apple's

iPod Touches and Nanos were expensive and therefore, not sustainable for the project in the long term although they were useful for piloting the materials. Consequently, the project team decided to use a mobile phone based kit costing no more than £60 (per teacher) for this phase (mobile phone, SD card and portable rechargeable speakers). This is also in response to the criticism that ICT for development projects often fail to build on existing systems or work in a participatory way and therefore do not achieve local ownership (e.g., Thompson, 2008). The Pilot phase indicated that almost all teachers either had a mobile phone or had access to one. Also, there were issues around re-charging the iPod and the speaker in certain EIA schools. Given that teachers were able to re-charge their own mobile phones, it was sensible for the project to build on the existing technologies. Therefore, EIA decided to carry out a feasibility/ field test of three types of mobile phones, SD cards and speakers within the budget constraint of Bangladeshi Taka 6,000 (£60). Table 2 summarises the three mobile technology kits.

During the field test (March to April 2011) there were 40 participating teachers from two Upazillas (Rangamati & Pangsha) as well as 5 teacher facilitators (trainers). Additionally the project recruited five teachers who had their own mobile phones that could support SD cards and five additional teachers who had never used EIA's materials before were also recruited and provided with Kit 1. 20 teachers (10 from each Upazilla) received Kit 1 (Nokia C1-01) and the other 20 received Kit 2 (Maximus). All teachers received a small portable rechargeable speaker.

To support the teachers, EIA produced a one page instructional guide on where to find EIA materials on either the Nokia or the Maximus mobile and how to use/recharge the portable speakers with each phone. All teachers also received a face-to-face induction session to introduce the new kits and they were required to return their iPod Nanos. Individual follow-up with the teachers was provided through phone calls twice a week and teachers were encouraged to call for assistance if they needed it. EIA also piloted a short message service (SMS) teacher professional development weekly over the 12 week testing period. In March 2011, visits were made to each Upazilla and 12 classroom lessons were videotaped to assess the teachers' use of the various Kits. Teachers were also briefly interviewed. The key findings from this field test are summarised.

During the field test, both quantitative and qualitative methods were employed to collect the data. The quantitative method consisted of a

Table 2. Mobile technology kits for Phase 2 (adapted from Walsh et al., 2011)

Kit Option 1	Cost

Equipment:
• Nokia C1-01 Mobile Phone (plays audio/video supported with SD card up to 32 GB)
    4GB midrange SD card
    Portable rechargeable speakers
	£59

Kit Option 2:	
Equipment: • Maximus M45i Mobile Phone (plays audio/video supported with SD card up to 32 GB) • 4GB midrange SD card • Portable rechargeable speakers	**£51**
Kit Option 3:	
Equipment: • 8 GB SD card • Portable rechargeable Speakers • Teacher's own mobile phone	**£28**

survey with all 40 teachers. The survey concentrated on ease of use regarding EIA materials, recharging the kit, comparison with the kit from the Pilot phase (iPod and Logitech and Block Rocker speakers), portability, navigation, and functionality (e.g., calls, and text messages). The survey included statements about the user-friendliness of the mobile devices in the context of teaching and learning English language. To exemplify, some statements are given:

1. Finding EIA songs/ dialogues on the Nokia/ Maximus is easy.
2. Playing EIA songs/ dialogues on the Nokia/ Maximus is easy.
3. Recharging the Nokia/ Maximus is easy.
4. Recharging the new speaker is easy, etc.

Complementing the survey, a qualitative method was also used. It included a number of interviews and focus group discussions.

The survey data findings showed that the teachers preferred Nokia C1-01 (Option 1) to the other options listed in Table 2. For example, all respondents either strongly agreed or agreed that finding or playing EIA songs and dialogues on the Nokia is easy whereas 10% of the respondents either strongly disagreed or disagreed that finding EIA songs and dialogues on the Maximus is easy and 15% of them with the statement that playing EIA songs and dialogues on the Maximus is easy. Similarly, all the respondents either strongly agreed (60%) or agreed (40%) with the statement 'EIA materials on the Nokia with the new speaker make my English teaching more communicative.' On the other hand, 10% of the respondents were undecided about the Maximus.

Confirming the survey findings, during interviews (both individual and focus group), the teachers indicated that they prefer the mobile phone and portable speakers over the Apple products and Block Rockers/Logitech speakers because they were: (1) easy to charge; (2) safe/easy to carry; (3) easy to navigate; (4) easy to use/connect with speakers; and (5) overall as a kit, easier to manage (all in one, rather than having an additional device to carry/charge

(i.e., the Nano). The following quotes from the teacher interviews shed further light on the practitioner perspective with regard to the Nokia phone:

Now I can do many things (record, take photographs, use internet, play national anthem in assembly, etc.) with the mobile, which I cant do with the iPod Nano. (Teacher 5)

The mobile phone is much better than the iPod Nano and also the speaker. I can keep it in my pocket and can charge from anywhere. It takes only 30 seconds to prepare the connection between the mobile phone and the speaker and to play the audio file in total is about a minute. (Teacher 6)

Those participants who tested the Maximus mobile phone stated that it was difficult to navigate and connect to the speaker as indicated by the quotes:

The iPod is easy to play, but the Maximus mobile is not easy to use. The Maximus mobile phone has some disadvantages, to find a file needs more time. (Teacher 7)

The iPod was easy, the Maximus takes more time to find a lesson. (Teacher 8)

Finding lessons takes time, connection between the mobile phone and speaker takes time. (Teacher 9)

Stop, pause, play is not easy. Navigation is too hard. (Teacher 10)

It is interesting to note that the teachers who tried the Maximus mobile phone found the iPod easier to use unlike those who tested the Nokia one. It may have been useful to investigate what users would think about both Nokia and Maximus if both the devices were given to the same participants.

Those teachers who tested Kit Option 3 (Table 2) were also interviewed to explore their

experience. The interview data suggests that they used the micro SD cards with relative ease and that their own mobile phones were relatively easy to connect to the portable rechargeable speakers they were supplied. The two quotes sum up the findings regarding Kit Option 3.

I think mobile using is very easy than iPod Nano and block rocker speakers. I think there is no disadvantages to use mobile with speakers. I can listen to all files and watch the teacher professional development videos. (Teacher 11 with Techno T950 mobile)

I could not find any disadvantages using the mobile with the SD card. All the EIA materials like classroom materials, additional resources, Rinko's World, Essential English, Pronunciation and BBC Buzz. (Teacher 12 with Symphony X 120 mobile)

Given that these teachers used the SD card on their own mobile phone and were comfortable using the devices for their teaching and professional development, the third phase of the project (institutionalization – 2014 - 2017) is likely to take this route for a more sustainable option.

## English Language Improvement: Trinity Assessment

In order to measure the impact of mobile technology-enhanced professional development resources, the teachers were tested twice for their speaking skills in English language, one in February – March 2010 (the beginning of the EIA intervention) and another one in March – April 2011 (the end of the intervention). These tests were administered in line with the Baseline Study (EIA, 2009a) and were carried out independently by Trinity College London. While 523 teachers' (367 primary and 173 secondary) English language listening speaking skills were tested in 2010, a total of 317 teachers (230 primary and 87 secondary) participated in the Trinity test in 2011. It should be noted that

the participants were randomly selected from the participating EIA schools and the participants were tested only once. The second cohort of the participants had similarities to the first cohort in terms of the gender proportion, geographical spread and teaching experience. A summary of the key findings is reported.

The Trinity test (GESE) indicated that there had been some improvement in the EIA teachers' speaking skills in English over the period of 13 – 14 months. As shown in Figure 2, while 62% of the total 524 teachers were at Level 3 or below on the Trinity grading system in 2010, only 50% of the total 317 teachers were at Level 3 or below in 2011. According to the CEFR levels, these teachers' English language proficiency is at the lower end of A2 or below (http://www.trinitycollege.co.uk/site/viewresources.php?id=1245 for Trinity GESE and CEFR equivalence). More importantly, while only 18% of the total 524 teachers were at or above CEFR Level B1 (Trinity GESE Grades 5 – 9), 29% or more of the total 317 teachers were at CEFR B1 or above. These increases indicate that the EIA teachers had developed not only their professional skills but also their English language proficiency. It is notable that their improvements were across the range of the Trinity grades rather than only at the lower level (e.g., Grades 1 – 3, CEFR A1 and A2).

Nevertheless, these results may have to be treated cautiously given the fact that the participants were not the same for the 2010 and the 2011 tests. It may be that the second cohort of the participants had better English language proficiency than that of the first cohort. Yet, it is also true that mobile technologies enabled the EIA teachers to access the teacher professional development materials which indirectly enhanced their English language development as well. As a large-scale project, it has a challenging task of enabling a massive number of teachers to teach English in their schools by improving their English language. In order to address this challenge, EIA has, in fact, developed a course called English Language for Teachers (EL4T) for both primary and second-

Figure 2. Teachers' English language attainment in 2010 and 2011
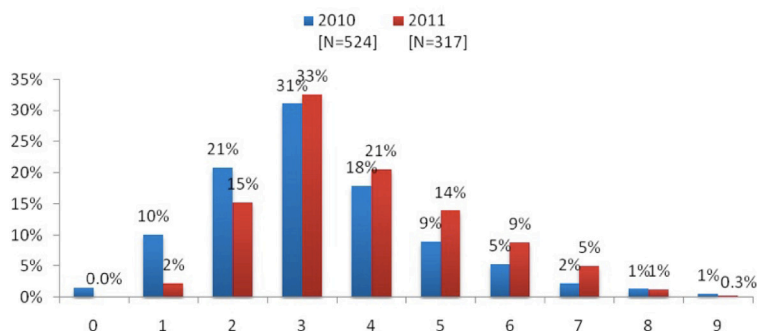
ary English language teachers, which was co-led by the author. It remains to be seen how it will help the teachers improve their English language in Phase II in which 12,500 teachers will be using EL4T.

CHALLENGES

The studies conducted by EIA also indicated that there are significant future challenges to take into consideration as the project scales up in the next two phases (Phase II and III). These challenges include an alignment of professional development materials with the national curriculum, user friendliness of the technological tool kits, teachers' motivation and support from the school management and education managers in the district.

The teacher professional development materials were provided to only the secondary teachers in the Pilot phase. These materials included references to the national English language textbooks (namely, *English for Today*). Given that the link was not explicit enough, some teachers often failed to notice the relevance of the materials. As a result of this, the newly revised materials for the secondary now have specific references to various lessons from *English for Today* Grades 6 to 10. The audio and video materials are much more scaffolded than before. It was also noted in the Pilot phase that the primary teachers may benefit from having similar professional development

materials. As these materials were launched at the time of writing this article, there is a need for investigating how the teachers use them and if their use makes a difference to their classroom practices.

As explained previously, Apple's iPod Touch (2nd generation) and Nano (4th generation) were used due to their functionality and relatively better user-friendliness compared to other mobile devices available in 2008/09. However, there were practical problems reported by the teachers. For example, often teachers from the rural schools reported that they had difficulty of recharging the speakers and their iPods, as the electricity supply across Bangladesh is intermittent. Classroom observations also showed that some teachers were still struggling regarding the use of the iPod in terms of navigation. In particular, they seemed to take a long to time to locate the material for their specific lesson (aligned with the national curriculum and textbook) when in the classroom. Even though they were trained to queue the device before class, some found this not possible for various reasons. As a result, some teachers may not have used the device regularly. Most importantly, Apple products are far too expensive in the context of Bangladesh and therefore not sustainable. For this reason, as reported earlier, the project decided to rely on the existing technology in the country, namely mobile phones, for the Upscaling phase (2011 – 2014). Mobile phones with SD cards and portable rechargeable speakers

(4,000 each) were distributed to 4,000 teachers through 80 workshops across Bangladesh in June and July 2012. The initial impressions from these workshops suggested that there were very minimal technological problems reported by teachers.

Sustaining teachers' motivation to use the teacher professional development materials has often been a big challenge, especially with the secondary teachers. Teachers tend to be enthusiastic at the beginning of the intervention and that enthusiasm is gradually lost. Taking this into account, a number of cluster meetings are organised for the EIA teachers every month, which helps the project to keep the teachers motivated. To provide further support, head teachers from the participating schools are brought together through regular meetings.

CONCLUSION AND IMPLICATIONS

In this article, I reported on a large-scale English language teacher development project in Bangladesh. Research on large-scale mobile-technology based projects from developing countries is limited. This article is a step towards contributing to the growing body of research in this area, particularly the use of mobile technologies for English language teacher development at a scale.

The focus of the article was on the design of teacher professional development materials using iPods and mobile phones and its implementation. Key findings from a number of EIA research studies were reported, highlighting both the success and the challenge the project faced in the first phase. These studies indicated that the EIA teachers may have developed their teacher professional skills and their own English language skills by making use of the multi-media materials supported by mobile technologies. It was also argued that mobile technologies empowered teachers because these technologies created an opportunity for them which did not exist previously. However,

it is important to note that without integrating the project into the existing education system (including socio-cultural and political contexts), the project would have failed as many other ELT projects from around the world did (e.g., see Waters, 2009, for a review). EIA, as an innovative project, is likely to face many more challenges in its next two phases. Those challenges, nonetheless, may be overcome if the project team is able to utilise the knowledge of the local context and EIA's own experience of the pilot phase.

A number of implications may be drawn for other similar projects in the light of the lessons learned from the EIA project. First and foremost, any innovative project plan needs to create a space for integrating the project with the existing education system (including socio-political) for any systemic change. This also means being able to engage key stakeholders of the project (e.g., relevant government bodies and local institutions) from early on. Without these two, the project is very unlikely to sustain changes. Next, it is essential to recognize that technology is simply a tool to serve a specific purpose and the project needs to be able to change tools if required. More importantly, the focus of the project needs to be on human capacity building (humanware) rather than the technology. Rather, the project needs to capitalise on available everyday technology for educational purposes. Equally, it is important to remember that innovation in education is a slow and dynamic process and therefore, the project strategy needs to consider this and develop contingency plans if needed.

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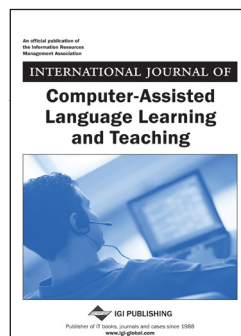
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