mLearn 2012
11th World Conference on Mobile and Contextual Learning

mLearning Solutions for International Development: Rethinking what's possible

Proceedings from Pre-Conference Workshop

Can it be "Just the right content,
on just the right device, for just the right person,
at just the right time, at just the right cost"?

15 October 2012
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1: OVERVIEW OF WORKSHOP

This workshop set out to explore mLearning's contribution to International Development, where education is considered a long-standing and significant indicator of, and contributor to, economic success. Never before has mLearning been more relevant to the field of International Development. The use of low-cost mobile phones offers unprecedented opportunities for many sectors, including education.

Much of the rhetoric around mLearning suggests that mLearning projects should:

1. *be ideally positioned for working at large-scale (thousands to millions of users);*
2. *demonstrate cost-effective and appropriate technology for less economically development countries (LEDCs);*
3. *have high impact on social and economic practices.*

Yet whilst there are many mLearning initiatives around the world, their impacts are often not documented in the research literature. This workshop therefore set out to explore examples of mLearning and the significant potential they hold to transform the delivery of education and training for International Development, whilst also presenting opportunity to consider the challenges of achieving scale and impact through mLearning in LEDCs, and potential ways forward.

The workshop was set up to provide a platform for exchanging experiences, challenges and issues; showcasing projects; and disseminating best practices amongst those working within the field of mLearning in International Development.

This report is intended to capture and signal some of the ideas and thoughts from the workshop, but is, by no means, a comprehensive report of the workshop. It is intended to be read alongside the papers and presentations from the workshop.

1.1 Objectives of Workshop

- To explore the contribution of mLearning within International Development.
- To present examples of mLearning and demonstrate their potential for transforming the delivery of education and training for International Development.
- To consider the challenges of achieving scale and impact through mLearning in less economically developed countries, and ways forward.

1.2 Workshop Panel

The panel comprised representatives from Athabasca University (Canada), BBC Media Action (Bangladesh), The British Council, English in Action (Bangladesh), The Open University (UK) and RTI International.

1.3 Workshop Participants

The participants comprised experts and practitioners in mobile learning from across the world, with a focus on International Development.

1.4 Workshop Presentations

- 'Accessible and affordable education with mobile technology and open education resources', Dr Mohamed Ally, Athabasca University.
- 'Mobile for English for Development: Case studies from the British Council', Neil Ballantyne, The British Council.
- 'BBC Janala mobile service: A response to context and user experience', Tanya Cotter & Tanim Ashaf, BBC Media Action.
- 'Usability and sustainability in using audiovisual contents for ELT: Bangladesh perspective EIA', Mahbub Leelen, English in Action.
- 'Mobiles for teaching (and learning): Supporting teachers with content and methods for reading instruction', Sarah Pouezevara & Carmen Strigel, RTI International.
- 'School based teacher professional development in Bangladesh', Tom Power, Dr Robina Shaheen and Claire Hedges, The Open University & English in Action.
- 'mLearning for International Development: Rethinking what's possible, worrying about what's likely', Professor John M. Traxler, University of Wolverhampton.
- '"You talkin' to me?" Personalizing large scale teacher professional development through the use of video on mobile phones', Clare Woodward, Mohammed Arifuzzaman, The Open University & English in Action.
- 'Using mobile phones for health and legal rights education with communities disproportionally at risk of HIV in Thailand', Christopher Walsh, Nada Chaiyajit, Bruce Lasky, Wendy Morrish, Bridges Across Borders Southeast Asia Community Legal Education Initiative (BASEA CLE).

2: COST-EFFECTIVE AND APPROPRIATE TECHNOLOGY

2.1 Assessing the Context of Use

Assessing the context of the use of the proposed mobile technologies is a crucial, but often under-thought, element of project design. The following points may be important in considering project design.

- Starting with the learning and social practices that the project wants and needs to promote and support, then considering how technologies can help these practices, and finally considering particular products that may be used.
- Building networks into the local telecommunications sector to find out what is actually accessible and how it is being used.
- Knowing your intended users and using specific technologies for target groups.
- Undertaking extensive user testing throughout project development and implementation, and, most importantly, changing project design in response.
- Using widely accessible tools, for example, in Bangladesh there are over 90M mobile phone users out of 160M population.
- Looking at familiar technology, in terms of use, maintenance, operation and cost. Practical issues can determine success, for example, access to power.
- Carrying out future technology scenarios to assess locally relevant developments and opportunities.
- Changing technologies at different stages of projects, for example, piloting what is coming up, but, when going to scale, using what is affordable for the users themselves.
- Learning from other projects, for example, Nokia mobi-learning project provides mathematics applications for students, which might have potential for application to other domains.
- Optimising low-end technologies, for example, Nokia lightweight browser is now being used on low-end phones for agriculture education.

2.2 Project Examples

British Council: SMS project for English for development 'from local to global'

- Aiming at reach (i.e. number of users) and opportunity (i.e. bringing new learning opportunities).
- Showing benefits to date of:

    - Reach, for example, 60,000+ users in Sudan and 130,000+ users in China;
    - Simplicity, for example, focus is on users receiving key phrases, rather than a focus on two-way interaction;
    - Positive user feedback, for example, in China, 89% of users read Learn English content every day;
    - Inexpensive to start up in current target countries.
- Offering challenges to date in:
    - Scalability, in that content can re-used, but not partners;
    - Partnerships, in finding and keeping effective partners;
    - Monetisation, in that in order to be full cost recovery, there needs to be substantial numbers of users to make the service affordable;
    - Promotion, in that this is most effectively carried out through mobile operators, but can be highly expensive if they charge;
    - Monitoring and evaluation, in that users may be unknown and remote;
    - Appropriacy of content, in that, as projects scale up, the content may not relevant for the new audiences;
    - Technical, in balancing simplicity of use with deeper learning experiences.
- Nokia Life Learning platform is providing opportunity for this to become global.

Bridges Across Borders Southeast Asia Community Legal Education Initiative: 'Using mobile phones for health and legal rights education with communities disproportionally at risk of HIV in Thailand'

- Focusing on access to health education and legal rights education.
- Targeting four specific groups (for example, sex workers) disproportionately at risk of HIV.
- Using low-cost peer counselling service through social networks on mobile phones to enable those most marginalised and at risk to access health information and advice.
- Setting up community-based online groups, developing and sharing sexual, human and legal rights manual, supplementing with peer outreach worker support.
- Supporting agencies, such as health clinics, lawyers and police, on how to deal with issues and provide appropriate advice and guidance.
- Promoting a pro bono ethic in next generation of lawyers.

- Achieving reach, for example, Facebook groups have 1,000–2,000 members each and YouTube animations have been viewed over 500,000 times.

2.3 "Don't Blink, You Will Miss It": Challenges Ahead

- High pace of technology change, pointing to a key principle of designing for delivery across technology platforms and recognising that different audiences will want different technology solutions.
- Devising and sharing solutions which allow core work to be developed and then for this to be rendered in different formats as appropriate to needs of target learners.
- Exploring solutions that are platform agnostic, for example, audio and video resources on SD cards.
- Keeping up-to-date with current and anticipated access to technology, for example, currently only 8% of the developing world has broadband internet access via mobile, but how will this change in next 3 to 5 years.
- Engaging Governments in innovations in ways that support Governments to understand and implement the systemic, operational and funding changes required to move from innovation to widespread use of effective technologies.
- Building effective networks with educators, politicians, hardware and software developers in order to build and implement the use of mobile devices for education.
- Staying grounded during rapid changes in technology, for example, key success factors for English in Action schools component have been investigating reality of teachers' lives in Bangladesh, maximising use of familiar technology (e.g. mobile phones), not imposing high technology or high pressure change, integrating with the school current syllabus and textbooks, being authentic.
- When moving from small-scale to large-scale, how can projects use technologies that enable collaborative and empowering ways of learning but which do not depend on high levels of mediation by national/international external experts.
- When moving from small-scale to large-scale, how can projects move from training high numbers of teachers at a specific pedagogy to supporting teachers to become reflective practitioners.
- Replacing/reloading/updating contents – when users have limited access and familiarity with mobile devices, how can projects set up simple processes for finding and uploading new and appropriate contents.

- Working effectively with telecommunications industries, how do projects negotiate appropriate business models with, for example, 'for profit' mobile phone operators and how can projects promote and support non-profit telecommunications providers, for example, CREDO operates in US, but there are currently no similar organisations in developing countries.

3: WORKING AT LARGE-SCALE

3.1 Mobile Technologies in Informal and Formal Learning Contexts

- Informal learning has been transformed by mobile technologies. However, in respect of formal learning, the evidence is much weaker and such learning can be stifled in more formal settings when the users are not setting the agenda.
- Particular interest and focus is therefore on how and if mobile technologies can transform, for example, teacher education within a national framework. Can mobile technologies bring quality and change direct into school communities, and can this bring both benefits of impact and scale?
- Changing traditional formal learning environments is a hard and long process, and many projects use mobile technologies running alongside existing learning structures.
- Changing formal learning environments involves a complex range of stakeholders, for example in teacher education, curriculum and text book authorities, pre-service and in-service teacher training agencies, examination and assessment boards, inspection and monitoring agencies. This systemic embedding is crucial for reaching scale and achieving sustainability.
- Emerging theme is that people using mobile phone services for informal learning are moving on to other more formal ways of learning.
- Importance of drawing from existing research continues, for example, in teacher professional development, 'close to classroom' and collaborative peer learning are the two elements shown to effect change in teacher practice. This needs to drive the learning model, not the technology.
- mLearn study in Canada recommended that national agency should be established, standards for mobile learning should be developed, integration of mLearning into

strategic and education plans should take place. mLearning then starts to move towards the more formal sector.

3.2 Project Examples

English in Action: Adult Learning Component (BBC Janala)

- English in Action's Adult Learning component went to scale immediately on project start through BBC Janala on a cross-platform basis, which includes an English Language learning mobile phone service. Substantial up-front project funding enabled this.
- From the project start, BBC Media Action worked with the regulatory commission and mobile operators in Bangladesh, tapping into telecommunications sector knowledge and research and building long term relations.
- Formative research showed huge demand for English Language learning (84% of those surveyed), and this research was used to gain regulatory commission approval and mobile operators' agreement to run mobile English Language learning service.
- One-to-one interactions with potential users, continuous monitoring of audience reactions and continuous tracking of data have been and continue to be critical to understand users' needs, desires, English levels and technology levels.
- Strong brand reflecting values of core target audience was developed and used for promotion and cross promotion of the English Language learning services.
- Crucially, the price of calls is at below the normal tariff; originally ½ of normal tariff, and now ¼ of normal tariff.
- Challenges for future include giving users more flexibility without compromising ease of usability, monitoring target users' behaviour and technology adoption, persuading users to keep returning to the service, continuing to monitor reasons for drop out, and sustainability of the service when donor funding ends.
- Sustainability does not mean starting again. 26 million people calling to BBC Janala mobile platforms give a substantive foundation and customer base for Government and mobile operators to take forward. Concern is that, when mobile operators take over, will tariffs be maintained at levels appropriate for lower socio-economic groups.

Athabasca University: Mobile Technology and Open Education Resources

- Open Education Resources (OERs) are learning materials that are available freely for use, remixing and distribution.
- Benefits of OERs include low cost to learners, social justice (with access by anyone), prevention of duplication of effort. This suggests strong potential for high use and low cost facilitating large scale reach and use.
- However, currently issues are inhibiting their successful scalability - most OERs are available in English (which is not the language of many potential beneficiaries), ascertaining the quality of OERs is not straight forward, the lack of standards for development and review of OERs, and limitations in the accessibility of OERs through different technologies.
- Examples of mLearn OER projects include:
    - Mobile Workplace English Project, where multi-media mobile learning lessons target different employment sectors;
    - Open Access English lessons, which have over 85,000 users.

3.3 "Rethinking What is Possible": Challenges Ahead

- Responding effectively to the Government agency and corporate community attention which the mobile learning community is now receiving. Much of this interest centres on content and skills and how the infrastructure of hand sets scale up, but less attention is directed on if and how the pedagogy might scale up. Substantial discourse is required to mitigate the risk that what has been found to be useful and worthwhile by projects in the global south becomes distorted when taken up.
- Engaging with policy-makers, so that the transition between researchers and research projects and policy-makers and widespread implementation is a powerful and appropriate process.
- Handling the multiple facets of institutionalisation into Government systems and structures: for example, transition from Government support to Government ownership; generating field level capacity to implement and monitor; generating national and regional capacity to manage implementation and strategy; persuading Governments to adopt technology for learning, in particular, mobile technologies.
- Engaging with Governments: exploring range of potential approaches from initial independent project pilot to joint planning with Government from project start.

- Working with the complexities of Governments, recognising that there is no single entity, but a collection of powerful agencies, politicians, policy-makers and others coming and going. How can projects best engage with and make collaborations with the range of people within Governments, who have power and who can pursue the project agenda.
- Recognising and responding to the paradigm shifts in going to scale, for example moving from international/national experts to peer learning, moving to use of ubiquitous and affordable technologies, moving to large-scale and locally driven quality assurance and monitoring.
- Recognising the multi-faceted nature of scaling up, to include not only costs and funding, but also how learning dynamics and cultural aspects change at scale.
- Realising the potential of OERs by making them truly accessible: for example, focusing on widespread access of OERs through mobile technologies which are available, familiar and affordable to intended beneficiaries; using local languages of intended beneficiaries; signposting to high quality and relevant OERs.
- Using potential of mobile technologies to give voice to those with little power in the community to claim entitlements to quality education and to raise profile with Governments.

4: IMPACT ON SOCIAL AND ECONOMIC PRACTICES

4.1 Evaluation of Project Impact

- Very few projects are designed with rigorous monitoring and evaluation.
- The majority of projects focus on access, but do not look at impact on learning outcomes. Lack of funding and opportunity costs constrain this. Projects therefore tend to be strong at monitoring and documenting, but poor at evaluating how the project is meeting its goals. How much was delivered is a much less challenging question than what did learners learn.
- Many projects consider and monitor access and then simply assume learning.
- As a result, despite many projects, there is weak evidence of impact on change in classroom practices and/or student learning.
- However, there is a now a donor shift from measuring outputs to measuring outcomes.

- There is a need for better understanding of goals (i.e. quality rather than reach), better understanding of monitoring and evaluation, and increasing capacity.
- For example, it is important to build in, from project start, the capacity development of partners in respect of report and conference writing. Open Access journals can facilitate this.
- Major issue is sustainability, in that we do research projects, but what do we leave behind that can be taken forward.
- As projects move into adults in self-directed environments, such as English in Action through BBC Janala, user panels may be an important source of data.

4.2 Project Examples

English in Action: Schools Component

- Research, monitoring and evaluation is an independent output for the project.
- As part of the project design, evaluation of impact has been undertaken through both quantitative and qualitative studies for the schools component directed at:
    - Understanding teacher and student views about their experiences of, and how they think about, learning English;
    - Examining classroom practice;
    - Measuring teacher and student English language competence.
- Base line studies showed very little English in lessons, very little student talk, 'chalk and talk' predominating.
- *Positive teacher and student attitudes* were seen after 9 months, for example:
    - 86% of primary teachers' and 92% of secondary teachers' attitudes showed a significant shift away from isolated grammar teaching, towards communicative language approaches, where grammar is explained as necessary to context of use.
- *Improved and sustained talk in the classroom* was seen over 12 months, for example:
    - 72% of all observed primary teacher classroom talk is in English and 79% of all observed secondary teacher classroom talk in English.
    - Around ¼ of all lesson time observed is student talk. Most observed student talk in EIA classrooms is in English (81% primary; 85% secondary).
- *Improved English language competency* was seen over 12 months, for example:

  Students:-

- 50% of primary students achieving Trinity grade 1 or above (improved by almost 15%).
- 90% of secondary students achieving Trinity grade 1 or above (improved by 15%).
- Improvements in secondary students' competency is seen across all grades.

Teachers:-

- Shift from lower Trinity grades (0-2) in 2010 to higher Trinity grades (3-7) in 2011 for both primary and secondary teachers.
- After a year, 10% more primary teachers now have competency to teach Class 3.
- After a year, 10% more secondary teachers now have competency to teach Class 6.

RTI International: Mobiles for Teaching

- Benefits of use of mLearning are seen as:
  - Accessibility to opportunities, content, experts and mentors, other learners;
  - Immediacy in terms of on-demand learning, real-time communications and data sharing, situated learning;
  - Personalisation through bite-size learning on familiar devices, promoting active learning and more personalised experience;
  - Intelligence with potential for advanced features to make learning richer through location-aware features and the like.
- Content development is therefore focused on micro-learning, with bite-sized content delivered at strategic times, and multi-media learning, engaging different learning styles and combining audio/visual, applications and games.
- To inform evaluation, assessment of learning outcomes by students and by teachers is built into the project design.
- This is further developed in Primary Mathematics and Reading project in Kenya. Four groups have differing access to technology in order to evaluate where technology makes most difference. The mobile devices (tablets) are themselves used as a research tool to collect research data using 'Tangerine' for researchers and to assess learner progress using 'Tangerine: Class' for teachers/coaches.

4.3 "From Access to Learning": Challenges Ahead

- Measuring impact when at a distance from partners, technology and geographically, particularly, in informal learning when projects may not know who the users are.
- Using effectively the mobile technology deployed for learning for the purposes of research and evaluation. For example, using the mobile device to measure and feedback on not only users' access and use of content but also assessment of learning outcomes.
- Sharing innovations between projects around the effective use of the mobile technology for research and evaluation.
- Funding evaluation of impact, when evaluation costs can be high and funding sparse. There is a dichotomy in that many donors will not scale up without rigorous evidence of impact, but funding costs for early data collection which will provide such evidence are high.
- Involving stakeholders and users in defining success criteria for evaluation, rather than being project or funder dominated, otherwise sustainability may be jeopardised.
- Designing evaluation in ways that both use simple research methodologies that can be implemented locally and which provide hard evidence of impact that can be credible globally.
- Evaluation of impact currently being determined project by project, resulting in little consistency across projects and no strong common emerging narratives.
- Raising standards of how research is communicated to wider audiences and how research is used for advocacy to decision-makers.

5: BUILDING ON THE WORKSHOP

5.1 Concluding Remarks

There are many examples of using mobile technologies for different purposes across the globe - as a tool for survival, money-making and, increasingly, education. Despite this increase in educational use, there is a significant gap in exchange of experiences between projects. Many of these projects struggle with the same issues independently. The challenges are common, yet sharing of solutions is not.

5.2 Way Ahead

- To make available all papers as conference proceedings accessible through mLearn 2012.
- To publish selected papers in a special Issue of the international peer-reviewed journal *Digital Culture & Education* entitled, 'mLearning solutions for international development: Rethinking what's possible'.
- To build on the network of experts and practitioners at the workshop to engage in a wider discourse with leaders in and influencers of policy making, such as UNESCO.

"Professional development is a process, not an event".

APPENDIX 1: WORKSHOP PROGRAMME

09:00	Participant arrival (refreshments in café)
09:30	Introductions: Chair, workshop organisers, panel
09:50	'Question time' discussion
10:50	Morning break (refreshments in café)
11:10	Presentation group 1: mLearning & international development: Achieving scale & impact • **Tom Power, Dr Robina Shaheen & Claire Hedges** 'School based teacher professional development in Bangladesh' • **Neil Ballantyne** 'Mobile for English for Development: Case studies from the British Council' • **Dr Christopher Walsh, Nada Chaiyajit, Bruce Lasky & Wendy Morrish** 'Using mobile phones for health and legal rights education with communities disproportionally at risk of HIV in Thailand'
12:40	Presentation Group 1 summary
12:50	Lunch
14:00	Review of morning/Intro to afternoon
14:10	Presentation group 2 & 3 (combined): Working at scale & Cost-effectiveness & appropriate technologies • **Tanya Cotter & Tanim Ashraf** 'BBC Janala mobile service: A response to context and user experience' • **Dr Mohamed Ally** • 'Accessible and affordable education with mobile technology and open education resources' • **Clare Woodward, Mike Solly & Mohammed Arifuzzaman** '"You talkin' to me?" Personalizing large scale teacher professional development through the use of video • **Sarah Pouezevara & Carmen Strigel** 'Mobiles for teaching (and learning): Supporting teachers with content and methods for reading instruction'. • **Mahbub Leelen** 'Usability and sustainability in using audiovisual contents for ELT: Bangladesh perspective' on mobile phones'
15:50	Afternoon break (refreshments in café)
16:10	• **Professor John M. Traxler** 'mLearning for International Development: Rethinking what's possible and worrying about what's likely'
16:40	Summary - final discussion & questions
17:10	Review of workshop & farewell
17:20	Close

APPENDIX 2: WORKSHOP PANEL

Dr Robina Shaheen (Chair)

Senior Research Fellow, The Open University
Head of Research and Quality Assurance, English in Action
Dr. Shaheen completed her PhD (Education) from University of Birmingham in 2010. Prior to this she worked within the NGO sector before joining the International Labor Organization working on child labor elimination, and then UNICEF and the National Commission for Human Development (Pakistan) where she managed large-scale education projects aimed at enhancing access and quality of primary education in Pakistan. She has undertaken evaluation and consultancy projects for Aus-AID, NORAD and the Higher Education Academy.

She has taught on a range of undergraduate and postgraduate courses including Research Methods, Human Resource Management, Thinking Skills and Creative Leadership, and is an Associate of the Higher Education Academy. Her research has focused on development of student creativity. She is currently a Senior Research Fellow at The Open University and Head of Research and Quality Assurance within English in Action.

Dr Mohamed Ally (Panellist)

Professor in Distance Education & Researcher in the Technology Enhanced Knowledge Research Institute, Athabasca University

Dr Ally's current areas of research include mobile learning, e-learning, distance education, and use of information and communication technology in training and education. He is Past-President of the International Federation of Training and Development Organizations (IFTDO) and is a Founding Director of the International Association of Mobile Learning (IamLearn). He was also on the board of the Canadian Society for Training and Development. Dr Ally chaired the 5th World Conference on Mobile Learning and co-chaired the 1st International Conference on Mobile Libraries. He recently edited 4 books on the use of mobile technology in education, training and libraries. His book, *Mobile Learning: Transforming the Delivery of Education and Training*, won the Charles A. Wedemeyer Award for significant contribution to distance education. Two of his research papers won the best research paper award at national and international conferences. He has published in peer-reviewed journals, chapters in books and encyclopedia and served on many journal boards and conference committees. He has presented keynote speeches, workshops, papers and seminars in many countries.

Neil Ballantyne (Panellist)

Mobile Learning Manager, British Council

Neil Ballantyne is the Mobile Learning Manager for the British Council, the UK's organisation for cultural relations and educational opportunities. He works as part of a global team providing learners and teachers of English with access to English language products and services. Neil is responsible for the development and delivery of products via mobile devices, including a suite of smartphone apps under the LearnEnglish product range as well as managing projects for other methods of mobile delivery such as SMS. He works across the British Council's geographic regions to help develop business models for mobile products, to provide products that engage with audiences who wouldn't normally have access to English learning, and to provide direction in mobile learning through sharing research and good practice.

Neil has worked for the British Council since 1999 as a teacher, Senior Teacher and eLearning Consultant before his current position since 2011. He is currently based on Hong Kong and has also been based in Thailand and Azerbaijan. Neil has an MA in Digital Technologies, Communication and Education from the University of Manchester, UK.

Tanya Cotter (Panellist)

ELT editor, BBC Media Action

Tanya Cotter has been involved in English Language Teaching (ELT) in Europe, North Africa and Asia since 1991. She has been working for BBC Media Action in Bangladesh as the ELT Editor for BBC Janala since August 2010 and works across all the BBC Janala media platforms (television, mobile, web and print). Tanya was part of the BBC Media Action team which researched, designed and developed the BBC Janala Amar Engregi Course ("My English Course") on mobile. Prior to that, she worked as ICT Coordinator for the British Council in Bangladesh and Morocco and as an ELT Editor for Oxford University Press in the UK. She holds a Masters degree in ELT and Materials Development from Leeds Metropolitan University and the Cambridge Diploma in Teaching English to Adults (DELTA).

Mahbub Leelen (Panellist)

Head of Materials Development, English in Action

Mahbub Leelen works as Head of Materials Development at English in Action, a 9-year UKaid-supported education programme. He is responsible for planning, managing and overseeing the entire process of electronic and print-based educational materials development and production. This includes audio, video and print-based teachers' professional development and classroom materials.

Leelen received master's degrees in Film and Media from Stamford University and Philosophy from National University, Bangladesh. During his career he worked for different national and international NGOs and projects, in the areas of ICT and print-based materials development in the areas of adult literacy and social education, democracy and parliamentary affairs and communicative English language teaching and learning in schools. Along with his professional responsibilities, Leelen is also involved with film-making, creative writing and the theatre scene in Bangladesh.

Sarah Pouezevara (Panellist)

eLearning Specialist, Education Policy and Systems, RTI International

Ms. Pouezevara has over 12 years of experience as an education and development specialist with international nongovernmental organizations, United Nations organizations, multilateral and bilateral donors, universities, and charitable foundations. Her expertise lies in the areas of ICT in basic and higher education, mobile learning, open and distance learning, facilitation of ICT-enabled communities of practice, and teacher professional development. Since 2009, Ms. Pouezevara has supported early grade reading assessments and reading improvement programs in Egypt, Senegal, Mali, Malawi, Liberia, Kenya, the Democratic Republic of Congo, and the Philippines. She contributed to the conceptualization and development of RTI's custom interface for collecting EGRA data on low-cost mobile devices (Tangerine™), and other complementary ICT-enabled teaching tools for literacy and teacher professional development. Ms. Pouezevara holds a Master's Degree in International Educational Development from Teachers College, Columbia University in New York, with a specialization in Language, Literacy and Technology and a Bachelor's Degree in French and German Languages from the University of Colorado in Denver. She is the author and co-author of several publications based on practical implementation of educational innovations.

Tom Power (Panellist)

Senior Lecturer, The Open University

Programme Director, English in Action

Tom Power is Programme Director of English in Action at The Open University (OU). EIA is a 9-year programme to improve the English language competence of some 25 million people in Bangladesh. EIA provides teacher professional development and classroom resources through low-cost mobile phones, supporting changes in classroom practice for teachers across Bangladesh through peer-learning.

Previously he was co-director of the Digital Education Enhancement Project (DEEP) and a lead academic on the Teacher Education Sub-Saharan Africa (TESSA) programme. He has also worked on a number of UK teacher education programmes at the OU, including Teach Global, Teach and Learn and the Learning Schools Programme. He has been a regular presenter at COL, mLearn and eLearn Africa, and has been invited to speak on teacher education and international development at Oxford, Cambridge and Harvard Universities. Tom has carried out consultancies for DFID in South Sudan. He has also carried out consultancies for the Nelson Mandela Foundation's 'Unit for Rural Schooling and Development' in the Eastern Cape, South Africa.

APPENDIX 3: WORKSHOP ABSTRACTS

ACCESSIBLE AND AFFORDABLE EDUCATION WITH MOBILE TECHNOLOGY AND OPEN EDUCATION RESOURCES Dr Mohamed Ally, Athabasca University, Canada

The Millennium Development Goals and Education for All initiatives by the United Nations (United Nations, 2011) are ambitious but important initiatives to provide affordable education for all. However, to achieve these goals, learning materials must be available as open education resources and delivered on a variety of technologies, including mobile technologies. The combination of mobile technology and open education resources will revolutionize access to affordable education for all. Citizens in developing countries already have mobile devices and as the devices become more affordable, citizens will continue to acquire mobile devices rather than computers. The problem education is facing today is how to design open education learning materials for mobile devices so that people around the world can access the learning materials at no cost for learning purpose. This presentation will describe a project that developed ESL lessons to train employees to improve their English skills so that they can function effectively in the workplace. It will also present results on implementation of the mobile learning lessons and suggest further research required. Citizens around the world have the technology and are waiting for affordable access and learning materials. What will it take to provide access and to narrow the learning divide? The current and new generations of learners are using mobile technology to function in society and they will demand that learning materials be delivered on mobile technology. Is education ready for the mobile world and the new generation of students to provide education for all?

MOBILE FOR ENGLISH FOR DEVELOPMENT: CASE STUDIES FROM THE BRITISH COUNCIL Neil Ballantyne, The British Council

One of the British Council's immediate goals is that by 2014 it will further develop the impact and contribution which the English language makes to international development. This will partly be done through its operational work in self-access learning and with the public education sector in countries where we operate. In all these areas the proliferation of access to mobile devices is providing new opportunities to work with learners and teachers around the world.

This first manifested itself in the deployment of English content via SMS. This project became one of the core products in a range of global products for learners that were made available to British Council centres globally. A number of local British Council initiatives have also taken place, often building on previous projects and global Council resources. This paper looks at some specific examples of projects with a focus on increasing the Council's work in international development.

BBC JANALA MOBILE SERVICE: A RESPONSE TO CONTEXT AND USER EXPERIEINCE Tanya Cotter & Tanim Ashraf, BBC Media Action, Bangladesh

The BBC Janala English language learning mobile service launched in Bangladesh in November 2009. In the first three months after launch, there were approximately one million calls to the service and at the end of August 2012 there were around 6.4 million users. Does the success of the BBC Janala mobile service simply lie in understanding the huge demand for English language learning in Bangladesh and recognising that a mobile phone service could fill a gap in the market or do other factors come into play? If so, what are the factors? What lessons have been learned over its life time and what are the implications for similar projects? Finally, what does the future of the BBC Janala mobile service look like in terms of moving to the next level and sustainability? These are the questions this paper will attempt to answer using research collected by BBC Media Action from the initial research/design phase in 2009 to the end of September 2012.

Keywords: mlearning, mobile phone, technology, Bangla, mother tongue, repetition, audio, L1, L2, teacher figure, audio, developing countries, content

[1]BBC Janala Call Details Record from 1 November 2009 to 31 August 2012. Here, user is defined as 'unique cell phone number' which means each unique cell phone number in the record is counted as a user.

USABILITY AND SUSTAINABILITY IN USING AUDIOVISUAL CONTENTS FOR ELT: BANGLADESH PERSPECTIVE
Mahbub Leelen, English in Action

This presentation considers the use of audio-visual materials for English language teaching (ELT) in Bangladesh in terms of usability and sustainability. In particular, it discusses how the schools component of the English in Action (EIA) project has incorporated audio-visual materials and technology in to its approach. It includes discussion on materials for use in the classroom and for teacher professional development. It not only considers the usability of audio-visual materials and technology in Bangladesh, but also the sustainability of these in terms of integrating the EIA schools approach within mainstream Bangladeshi teacher training institutes and programs. The presentation provides details of the project intervention and its impact so far, as well as contextual background on Bangladesh, its education system and the use of technology for education.

MOBILES FOR TEACHING (AND LEARNING): SUPPORTING TEACHERS WITH CONTENT AND METHODS FOR READING INSTRUCTION Sarah Pouezevara & Carmen Strigel, RTI International

Educational innovations in developing countries are expanding as stakeholders shift from a focus on *access* to *quality*. In this paper, we present custom, tablet-based tools designed to help teachers capture, analyze and use results from reading diagnostics to improve teaching quality. Individual, timed, oral assessments of reading are increasingly being used to raise awareness of the low quality of reading instruction and achievement in low-income countries. RTI International developed an electronic tool optimized for low-cost mobile devices used to improve the quality and efficiency of these national-scale surveys. Following the successful adoption of the core platform, known as *Tangerine*™, RTI embarked on the development of complementary teaching tools for classroom use. One such tool, *Tangerine:Class*, assists teachers in systematically collecting, analyzing and using specific and progressive measurement of students' reading achievement to inform their teaching. We provide findings on the use of Tangerine for large-scale reading assessments, and specific country projects in progress to describe how the choice of a flexible design of the core software is sparking a variety of add-ons that address specific challenges in the delivery of reading instruction. As early grade reading assessments raise awareness of the low levels of achievement, new reading programs require reaching thousands of practicing teachers with curricular materials and pedagogical support. We argue that low-cost mobile devices can be an effective strategy for reaching large numbers of teachers and supporting them in consistent and high-quality delivery of reading lessons throughout the school year.

Keywords: reading, mobiles, tablets, open-source, assessment

ENGLISH IN ACTION: SCHOOL BASED TEACHER DEVELOPMENT IN BANGLADESH Tom Power, Dr Robina Shaheen & Claire Hedges, The Open University & English in Action

In the Least Economically Developed Countries (LEDCs), School Based Teacher Development (SBTD) is sometimes advocated as a potential mechanism for improving the classroom practices experienced by millions of children in a complete school system, as quickly as possible. Robust evidence is required for approaches to be implemented with some confidence by Government development agencies, such as the UK Department for International Development (DFID). SBTD has a long history stemming from the days of Stenhouse (1975) and the ideas of school-based curriculum development, which underlay the ideas on teacher-as-researcher, and is typically advocated in the developed world based on a view of the teacher as a professional (Bolam & McMahon, 2004). How might such notions play out, and to what effect, in LEDC contexts? This article examines the issues at stake in introducing SBTD in LEDCs, by examining: the nature of the evidence for various forms of teacher development, the nature of SBTD in particular and the evidence for its effectiveness. The latter issues will be illustrated through examination of English in Action (EIA), a large-scale SBTD programme for primary and secondary English Language Teachers serving government schools across Bangladesh.

Keywords: English in Action, School Based Teacher Development (SBTD), Bangladesh, technologies.

mLEARNING FOR INTERNATIONAL DEVELOPMENT: RETHINKING WHAT'S POSSIBLE, WORRYING ABOUT WHAT'S LIKELY Prof. John Traxler, Learning Lab, University of Wolverhampton

This contribution does not give specific examples of mobile devices delivering learning in development contexts; what it does instead is question the ways in which researchers and policymakers think about such examples. This is important because learning with mobiles in development is moving from projects, communities and researchers to agencies, corporations and policymakers; there has been an increase and a shift in interest in using mobiles to deliver learning in development amongst the wider world of agencies, corporates and ministries. This will not be ethically, culturally or pedagogically benign or straightforward. Perhaps it never was but it used to be smaller!

"YOU TALKIN' TO ME?" PERSONALIZING LARGE SCALE TEACHER PROFESSIONAL DEVELOPMENT THROUGH THE USE OF VIDEO ON MOBILE PHONES Clare Woodward, Mike Solly & Mohammed Arifuzzaman, The Open University & English in Action

Teacher training institutions cannot meet the teacher education needs of Bangladesh, like many other countries in the developing world. Teacher development has to happen in the schools themselves, improving the skills and techniques of teachers in their own classrooms.

However, the ambitions and assumptions of many teacher development programmes assume a technological infrastructure and know-how that is inaccurate and can be demotivating to teachers and students often faced with large uncomfortable classes, no or intermittent electricity and a blackboard as their sole piece of equipment. A challenge is to balance this low-tech reality with efficient and easy to use high-tech solutions. In response to this, following a pilot with 750 teachers across Bangladesh, English in Action, a 9 year UK-Aid funded partnership with the Government of Bangladesh, is currently working with 4,500 teachers of English to deliver professional development through authentic video of classroom practice supported by reflection.

We have utilized teachers' familiarity with mobile phones by developing a set of engaging interactive materials uploaded onto SD cards in their phones. Authentic classroom video of Bangladeshi teachers teaching their own students and using the government textbook is 'sandwiched' between film of a video mentor who introduces each video clip, asks questions, checks understanding and encourages reflection, aided by the use of SMS and regular monthly group meetings.

This paper will look at how we developed the concept of delivering a personalized and reflective approach to professional development through video on mobile phones and the teachers' response to CPD constantly to hand on accessible technology in their pockets.

Key words: teacher development, developing countries, reflective practice, authentic video

USING MOBILE PHONES FOR HEALTH AND LEGAL RIGHTS EDUCATION WITH COMMUNITIES DISPROPORTIONALLY AT RISK OF HIV IN THAILAND Christopher Walsh, Nada Chaiyajit, Bruce Lasky & Wendy Morrish (Bridges Across Borders Southeast Asia Community Legal Education Initiative (BASEA CLE))

The development and implementation of online and mobile phone-based HIV outreach and prevention programmes to protect public health and promote human rights—through a community-owned response with populations disproportionately at risk of HIV infection—is largely unexplored in the literature. We describe two unique projects' use of mobile and online technologies to remove barriers to learning; enable education to be delivered not-for-profit; and make sex and human rights education available to the most marginalised in Thailand: gay men, other men that have sex with men (MSM), sex workers and transgenders. Both projects take advantage of multiple entry points and opportunities to educate individuals about their personal risk to HIV, their human and legal rights and how to access justice if they find their rights are violated. The goal is humble, but the reach is significant with more than 1600 chats logged in just 10 months. The projects aim to reduce new HIV infections primarily through mobile phone-based peer education and counselling via instant messaging platforms on social networks that through health and rights education that is empowering and esteem building. The projects also use animations to promote sexual health, legal and human rights and access to contextualised high-quality HIV prevention on mobile phones through outreach to venues and/or online communities where member of these marginalised communities meet to find sexual partners.

APPENDIX 4: WORKSHOP PAPERS

BRITISH COUNCIL'S MOBILE LEARNING PROJECTS IN TERMS OF INTERNATIONAL DEVELOPMENT

Neil Ballantyne & Alex Tyres, The British Council

Introduction

One of the British Council's immediate goals is that by 2014 it will further develop the impact and contribution which the English language makes to international development. This will partly be done through its operational work in self-access learning and with the public education sector in countries where we operate. In all these areas the proliferation of access to mobile devices is providing new opportunities to work with learners and teachers around the world.

This first manifested itself in the deployment of English content via SMS. This project become one of the core products in a range of global products for learners that were made available to British Council centres globally. A number of local British Council initiatives have also taken place, often building on previous projects and global Council resources. This paper looks at some specific examples of projects with a focus on increasing the Council's work in international development.

SMS – a global mobile project

One of the most widely used projects in terms of mobile is the distribution of content via SMS. Starting in Thailand in 2008 and continuing today the use of SMS for language content delivery has been deployed in Colombia, China, Kazakhstan, Malawi, Sudan, Indonesia, Sri Lanka and Azerbaijan.

There are two basic types of content used – phrase-of-the-day content and quiz content. In the former the user receives an SMS, often with a translation. In the latter the user is sent a question by SMS and they respond with keystrokes. In both cases the content is usually split into weekly themes.

SMS has been seen as an important aspect of reaching users who would not have previous access to British Council content, this being the main objective of the countries who rolled out this offer. SMS has been most successful in providing this reach in China and Sudan whereas some countries have struggled to achieve their objectives.

A major challenge for the British Council is working with the vast number of mobile operators, often unique to that country, and the third party aggregators needed to help deploy the content. This has required in-country contacts and localised technical and legal (for contracts) support. This has not always been sustainable and is not easy to replicate from country to country. The success of many of the SMS projects waned after the original project manager left their post. Although the content used has been generally applicable at a global scale there is still requirements for localisation for example through translations and assuring local cultural sensitivities are met.

One of the other main challenges that is oft reported by the countries managing these projects is the question of promotion and this is where the relationship with the mobile network operators has proven vital. In Sudan and China numbers of subscribers were hugely boosted through promotional SMS sent to the customer by the operator. Where the Council had to pay for this type of promotion, for example in Thailand, the prohibitive cost of reaching all subscribers meant that impact was limited.

From a business perspective, these projects have tended to aim for full cost recovery and in some cases that objective has been met. However generating income that is then split between operator, aggregator and content provider means that large subscription numbers are needed.

In part response to the challenges of working at a global scale the British Council has signed a memorandum of understanding with Nokia to provide content through their SMS delivery service (Nokia Life). Nokia have the access to mobile operators and the platform from which to push the content and the British Council is trusted for its content. Feedback from the first project in delivering content via Nokia Life in China showed the content was well received and further projects in Pakistan and Kenya are in progress.

Jobseekers in India – challenges of distribution

Jobseekers is a project in India specifically aimed at providing English language skills for people seeking to enter the workplace. The content is a series of 90 short videos which follow a group of young adults as they attempt to gain employment. They are aided by a guru character who helps the jobseekers in talking about their goals and abilities, writing CVs, applying for jobs and succeeding in interviews; all this with a strong focus on the language needed.

The content was originally intended to be distributed via 3G networks, it is currently distributed by one of the main service providers – Tata Docomo. The user receives a daily SMS which contains a link from where they download the day's video content. However, the slow adoption of the 3G network across the country and the lack of national reach by many of the carriers (including Tata Docomo) has meant that a new distribution channel was sought. With the smartphone market in India expanding fast and Android having the market share, the India team have now brought the Jobseekers content to the Google Play market employing an in-app-purchasing business model.

Thai tablet project - Work in the Public Education Sector

An example of where the Council's work in the high-end market is cascading to projects with a more developmental focus is the repurposing of an app for a government-led technological intervention. The Thai government are pushing tablets into state primary schools[1] and are seeking content for the hardware.

[1] A pre-election promise by the then opposition in Thailand saw a 'one tablet per child' campaign which is now being envisioned.

An earlier project between the Council and the MoE had already mapped Council learning content to the Thai English syllabus. The Council had previously developed an app for high-end Samsung tablets which has also been released into the Google Play store[2]. This app uses Android, the ubiquitous operating system, the same as used by the tablets being bought by the Thai government. The app was thus used as a container for the previously mapped content, allowing it to be delivered into the hands of teachers and learners.

As well as providing the app, the Council also proposes providing teachers with resources and training to maximise the benefits of the digital content in their classrooms through a series of workshops and observational visits.

Vietnam - embedded content on notebooks and distributing learning resources remotely

In Vietnam, the results of a similar syllabus mapping project provided content for an educational platform pre-loaded onto Intel-powered laptops. The local Department of Education and Training aim to offer these devices at subsidised rates to every household in the country. Although not really a mobile device, the potential ubiquity of the device is similar to that seen by mobile devices. This flexible, out-of-school and learner-centred approach to teaching English language and digital skills also mimics many mlearning projects.

As part of the evaluation of this project a group of learners and parents were asked to keep journals of their use of the content. The feedback was mostly very positive with all learners and parents agreeing that the content package was helpful in developing their language skills. Teachers and ELT specialists in schools where the children had access to the laptops at home also expressed the same enthusiasm.

Also in Vietnam the British Council will be distributing content via the Nokia Education Delivery platform to schools by the end of 2012. The NED platform allows teachers in remote schools access curriculum-linked content via a Nokia phone which provides a content management system. Using the mobile networks to connect to the Nokia servers, the teacher can then use the mobile device as a content repository and media player.

Commonalities and conclusions

The Council's English language content is valued by learners, teachers and ministries of education worldwide. This is one of the main commonalities between all the above projects – and the challenge of getting this content to people in an efficient, effective and transformative ways is one the great challenges it faces.

A commonality that can be drawn from these case studies is the technical challenges faced on a country-by-country and project-by-project basis. As in the India case, the technical infrastructure needed for many of the projects simply isn't in place, despite

[2] https://play.google.com/store/apps/details?id=com.britishcouncil.avonmobility.learnenglishkids

the ubiquity of mobile devices. Many countries report the lack of local technical skills, both within the Council and the network operators themselves.

Monitoring and evaluation is challenged by the remote nature of the learning. In the Vietnam lap top project, one of the difficulties is the ability to get verifiable actual figures for reach as Intel distribute the chips and content via OEMs. Apps are almost always distributed via third parties – be it the app markets or via the hardware manufacturers pre-embedding content. SMS needs third party partners to get the content to users and the end users remain largely unknown. In China, however, the distributor did provide access to end users and useful evidence in transformative learning was gathered.

Challenges too exist in on-the-ground capacity. Project managers who know the projects intimately move on, and with them their knowledge of the lessons learned. The projects the Council is involved with are still in the countries in which we have a physical presence despite the opportunities of remote impact that mobile affords. This paper had intended to draw on the experiences of a project in Indonesia where mobiles are to be used for remote teacher training – however the timelines for this project have slipped and the planning stage is still in process.

One way the Council is finding solutions to some of these issues is working with other global partners, such as Nokia and Intel. This means that many of the challenges of working in individual countries can be managed more efficiently and are less reliant on in-country contacts. Building on previous work is also key - for example the earlier syllabus-mapping work in countries which is now finding new uses with new technological interventions reaching teachers and learners who would not have previously had access.

BBC JANALA MOBILE SERVICE: A RESPONSE TO CONTEXT AND USER EXPERIEINCE

Tanya Cotter & Tanim Ashraf (BBC Media Action, Bangladesh)

October 2012

Introduction

The BBC Janala English language learning mobile service launched in Bangladesh in November 2009. In the first three months after launch, there were approximately one million calls to the service and at the end of August 2012 there were around 6.4 million users[3]. Does the success of the BBC Janala mobile service simply lie in understanding the huge demand for English language learning in Bangladesh and recognising that a mobile phone service could fill a gap in the market or do other factors come into play? If so, what are the factors? What lessons have been learned over its life time and what are the implications for similar projects? Finally, what does the future of the BBC Janala mobile service look like in terms of moving to the next level and sustainability? These are the questions this paper will attempt to answer using research collected by BBC Media Action from the initial research/design phase in 2009 to the end of September 2012.

English in Action

English in Action (EIA) is a nine-year programme, launched in 2008, aiming to raise the English language skills of 25 million people in Bangladesh by 2017, enabling them to participate more effectively in economic and social activities. EIA is funded by the UK government and involves a consortium of partners including BMB Mott MacDonald, BBC Media Action (formerly BBC World Service Trust), Open University UK and two national NGOs – Underprivileged Children's Educational Programme (UCEP) and Friends in Village Development Bangladesh (FIVDB). These partners are working together to implement the programme by initiating innovative ways of teaching, learning and using communicative English for different sectors of society, including primary and secondary students, teachers and adult learners.

BBC Media Action and BBC Janala

BBC Media Action is responsible for EIA's adult learning initiative for which the target audience is adults aged 15-45 from the lower socioeconomic classes (with a focus on SEC D) [4] who may or may not be in formal education. In 2009, a nationwide baseline survey of 8,300 cable and satellite viewers/mobile phone users revealed (BBC Media Action, 2009):

- 84% of those surveyed viewed learning English as a top priority for the future with 99% reporting that they wanted their children to learn English.
- 64% felt embarrassed to speak English.
- 47% considered English to be too expensive to learn.

[3] BBC Janala Call Details Record from 1 November 2009 to 31 August 2012. Here, user is defined as 'unique cell phone number' which means each unique cell phone number in the record is counted as a user.

[4] Socio-economic class is defined by the profession/occupation and education of the chief wage earner of a household. SEC A (at the top end) through to SEC E.

- 44% felt that English was difficult to learn.
- 38% felt that learning English is only available to those able to afford it.
- 28% felt unable to learn English.

BBC Media Action harnesses the latest communications and multimedia technology to reduce barriers to learning English by providing the target audience with accessible and affordable English language learning opportunities. In addition, it aims to change perceptions of learning English (e.g. English is difficult to learn) and to support the development of an English language media sector through the innovative use of television, radio, mobile and other platforms. BBC Media Action has been providing English language learning resources under the umbrella brand of BBC Janala on television, mobile and web since November 2009. In May 2010, lessons also started being published in a leading Bangla medium newspaper three times a week and in December 2010, the first of four CDs was launched. In December 2011, the first book of archived newspaper lessons was published and a second book will be launched in October 2012. A programme for community radio has also recently been developed and will be piloted in late 2012.

For all its media outputs, BBC Media Action researchers draw on a wide range of quantitative and qualitative research methods to undertake data collection and analysis. These include:

- formative research into needs and context to guide development.
- pre-testing and piloting of media products to understand audience responses.
- monitoring audience reactions.
- evaluating impact.

The aforementioned nationwide baseline survey carried out in 2009 confirmed that there was a considerable demand for learning English amongst the adult population of Bangladesh. Further research revealed that learning English through a mobile phone in Bangladesh was feasible and had the potential to be a convenient, affordable and accessible way to learn to English. Today, mobile is increasingly commonplace, even amongst the poorest and hardest to reach communities, and at the end of August 2012 there were 95.528 million mobile phone subscribers in Bangladesh (BTRC, 2012).

In the initial design phase of the mobile phone service, telecommunications industry experts suggested the fact that an easy to remember short code[5] increases accessibility to a service. The Bangladesh Telecommunications Regulatory Commission (BTRC) approves all services using a short code and it was therefore necessary to approach and explain the purpose of the service to the Commission to get approval. For the service to be accessible to as many people as possible regardless of geographical location, it was also necessary for all six mobile phone operators to agree to provide the service on the same short code and, in order to make it affordable to all, it needed to be offered by all the operators at the same

[5] A phone number comprised of only a few digits.

reduced tariff. Discussions with the BTRC and the mobile phone operators resulted in the BBC Janala mobile service being provided by the six mobile phone operators on the same short code at the reduced tariff of 1 taka (0.008 GBP) per minute plus VAT. In October 2010, the mobile phone operators agreed to reduce the tariff by a further 50% to 50 paisa (0.004 GBP) per minute + VAT.

The BBC Janala brand and communications

In order for a new kind of self-directed English language learning service to enter the Bangladeshi market a distinctive brand was needed. With this vision, the project outputs had to attract and provide the target audience with ways and means to access a new kind of learning experience. However, it would be necessary to change perceptions that:

- English is difficult to learn.
- English is expensive to learn.
- English is only for the elite.
- English learning involves the rather joyless task of rote learning and grammar translation (for many rooted in the educational culture of English language learning).

Communications with the target audience had to open up new horizons and new hopes, carrying the brand essence of 'a life changing experience'. In the design phase of the project, research carried out by BBC Media Action revealed that the target audience for the media outputs was rooted in tradition, but at the same time, had aspirations for a better life ("roots and wings"). Several one to one interviews were held with representatives of the core target audience in order to establish a brand for the English language learning outputs on television, mobile and web. It was found that while there was already an association of the BBC brand with values such as trust and quality, the respondents felt 'BBC' needed to be combined with a Bangla word which reflected their own values. Eventually, the audience came up with BBC Janala - 'janala' meaning 'window', and 'jana' also meaning 'to know'. BBC Janala became the brand linking all the media outputs and offering audiences the opportunity to open up their own window on the world. The brand is now well-established in the market and is continuing its journey with the aim of enriching lives through innovative English learning services. A 2012 brand equity study revealed that there are associations of trust, progressiveness and opportunity amongst the regular users and triers of BBC Janala (Quantum Consumer Solutions Ltd. Bangladesh, 2012).

Potential users of any service need to be aware of its existence and that awareness needs to be subsequently converted into action. In the case of the BBC Janala mobile phone service, action means remembering and dialing a given number. The only way this can be achieved is through promotion of the service which for the BBC Janala mobile service has been achieved through television commercials, press layouts, push SMS[6]/ balance check promotions[7] and cross promotion of the mobile service

[6] A push SMS is an SMS text message sent by a mobile operator to all its subscribers to give information or promote a service.

with the television, web, newspaper and other BBC Janala platforms. Once users have dialed the service, it is then necessary for them to be able to access content and want to come back again. Although the BBC Janala mobile service is provided at a significantly reduced tariff, it requires a financial commitment from the low income groups it is trying to target. Therefore, it is crucial that the users can navigate their way to the content and be sufficiently engaged by it to want to make a further financial commitment by returning. Developing an English language learning mobile phone service which matches the target users' behavior and experience and which meets the core target audience's needs is of upmost importance.

Usability and functionality

The method of testing the usability and functionality of the BBC Janala mobile phone service has evolved over time. Four factors have played a key role in finding out the right functionality and ensuring usability of the service for the core target audience. These include:

- knowledge and experience of industry experts.
- rigorous one to one interactions with potential users.
- innovative prototype testing.
- continuous tracking of data.

During the development stage of the mobile phone service, there was very little secondary data available on the preference of service types, handsets, value added services (VAS)[8], expenditure pattern on VAS and other facts and figures related to mobile usability and functionality. Therefore, while developing the service, knowledge and expertise from telecommunications industry experts and rigorous one to one interactions with potential users played a significant role.

Smart phones[9] and touch phones were not popular in Bangladesh at that time and the price was too high for people from the lower socioeconomic groups to afford. Feature phones[10] with keypads were what people from the lower socioeconomic classes owned or had to access to. With these handsets, making voice calls and sending/receiving SMS text messages were possible and, as a result, a platform had to be chosen which was accessible from even the most basic phone with only voice call and/or SMS features. Due to its accessibility from any handset and network, an

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[7] Mobile subscribers can dial a given number in order to check their balance. The information requested is sent from the operator and flashes on the subscriber's mobile phone screen. There is also space after the requested information for mobile operators to promote a service, which is a balance check promotion.

[8] Value added services (VAS) are "offered by a network or its resellers; generates additional revenue by offering increased benefits to subscribers. Total VAS revenue is calculated from the total of SMS, data-over-cellular and information-service revenue. All other VAS revenue is considered transparent and is included with call charges or subscription revenue" (Gartner, 2012, p.1).

[9] A smart phone has advanced functionality (e.g. the ability to display photos, access the internet and receive/send emails). More modern smart phones (e.g. IPhone and Android based phones) can run third party applications thus providing even more extensive functionality.

[10] A feature phone is enabled with features such as the ability to store and play music or play games, but has less advanced functionality than smart phones.

interactive voice response (IVR) platform[11] was chosen. In terms of functionality, IVR was prioritized over SMS for the following reasons:

- People from lower socioeconomic groups in Bangladesh are not text savvy.
- Very few handsets support Bangla SMS. Therefore, SMS needs to be sent through English or through Bangla phonetic English for which there is no standard.
- IVR supports audio recording.
- IVR complements the audio content designed for people from lower SEC through rigorous research.
- SMS is bound by 159 characters and thus a very limited amount of content can be delivered through it.

Telecommunications industry experts suggested that an easy to remember short code increases accessibility to a service. One to one interviews revealed that of the vacant short codes respondents found '3000' the easiest to remember. BBC Janala is an IVR based service and one of the key features of this kind of service is the IVR menu. When users dial '3000', they hear an instructional IVR prompt which is a pre-recorded prompt requesting users to press a specific button on their keypads to listen to specific content. In one to one interviews conducted with users from lower socioeconomic classes, it was found that people tend to interact with prompts which are spoken at a slower speed than usual in a low pitch female voice. Additional one to one interviews with potential users revealed that they did not feel comfortable navigating through an IVR menu which meant that an option for directly dialing to content by adding one or two numbers to the short code '3000' was kept in the service.

When BBC Janala was soft launched on 23 October 2009, the '3000' short code was promoted, but it was found that 50% of the callers were dropping during the IVR menu, meaning that only 50% of the callers were actually accessing the learning content. From one to one interviews, there was an indication that users were not comfortable navigating through an IVR menu by pressing buttons and, as a result, the communication of short codes was changed. As there were two content series available through the mobile service at that time, two separate short codes were promoted and thus users were able to access content directly by dialing the specific short code for that series of lessons. The short code '300011' was promoted for the Essential English lesson series and '300012' for the Pronunciation lesson series. Although, users were more likely to remember '3000' and thus the call rate on this short code was much higher, the call access rate was much higher for users directly dialing the short code '300011' or '300012'.

Development of the BBC Janala *Amar Engreji Course* ("My English Course"), which launched in March 2012, brought a new angle to the discovery of usability and functionality of mobile services for people from lower socioeconomic groups. This English course is a one of a kind service; a complete course on a mobile IVR platform

[11] Users dial a number and listen to pre-recorded prompts which offer different options (IVR menu). Users interact with the keypad of their handsets to select their preferred option in order to access pre-recorded content which may or may not require further interaction with the keypad.

which incorporates three-minute pre-recorded bilingual audio lessons with self-evaluation IVR quizzes and SMS summaries. The course is comprised of 24 chapters with each chapter made up of four audio lessons (conversation, vocabulary, grammar and pronunciation), an end of chapter IVR quiz and an optional SMS summary of the learning content for the chapter. It is progressive and has an automatic bookmark feature which remembers a user's last completed lesson and allows them to start from the next lesson when they come back after disconnecting. The idea of a course with such a bookmark feature came from research into audience reactions to the service and was suggested by users.

Initially, three things were tested for the course. Firstly, a prototype registration feature was tested on the actual system. Users successfully handled the registration module and it was found that users were able to handle one question or one issue at a time with the same findings being revealed when the quizzes were tested. The registration option was later dropped since not only would it have been a barrier for people to go through a registration process before accessing the content, but also because of financial and time constraints.

Secondly, the concept of the course was tested. Instructional prompts and mock lessons were preloaded onto a mobile handset and a playlist was created in such a way that the user would be able to understand how the course worked and how it sounded. From this test, it was found that users wanted to repeat lessons and for this reason an instructional prompt to repeat a lesson before moving on to the next lesson was given. However, at the same time, it was also evident that users would have difficulty in remembering long prompts.

The instructional prompts were refined and tested in another set of one to one interviews. Again, instructional prompts and mock lessons were preloaded onto a mobile phone and a playlist was created so that users could simulate using the course. From this test, three key factors regarding instructional prompts emerged:

- Instructional prompts need to be as precise/concise as possible. For example, press 1 to repeat or press 2 to progress.
- People tend to listen, remember and react to earlier options in an IVR menu. For example, if there are four options in an IVR menu, people either press the first button they are instructed to or remember the first two options only.
- Even if the instructional prompts are repetitive, it takes time for a user to get used to them. From previous one to one interviews with users and from analysis of call records, it was noticed that people tend to drop out when there is too much on the menu to handle. Therefore, an option of automatically taking the user forward when no button is pressed was introduced. However, in order to play the quizzes, users have to press buttons and no solution can be found to resolve this.

Three months before the launch of the course, a pilot was carried with the actual course on 24 representatives of the core target audience and it was found that most of the respondents were comfortable handling the whole package. It can thus be seen that usability and functionality of a service depends on the target users'

behavior and the available technology in the market, but this is just one part of a big jigsaw puzzle.

Content development

Developing the content for the BBC Janala mobile service has been just as challenging as designing and developing the functionality and usability. In the same way as functionality testing, the method of testing the content for the BBC Janala mobile service has evolved over time. Factors which have played a key role in developing appropriate and relevant content for people from lower socioeconomic classes in Bangladesh include:

- knowledge and experience of both ELT experts familiar with Bangladeshi learners and the local context and of experts in Mass Communications (Bangla).
- rigorous one to one interactions with potential users.
- innovative prototype testing.
- continuous tracking of data.

One to one interviews with representatives from the core target audience in the initial phase revealed that there were problems with the content which needed addressing. There were issues with regards to:

- the length of the lessons. Individual lessons were too long and one to one interviews identified a preferred duration of 2.5 to 3 minutes due to both cost for the user and ability to recall the lesson.
- the amount of English learning content. This was too great and needed to be reduced. For example, when testing vocabulary lessons, one to one interviews revealed that most users could recall and produce either accurately or partially a short two-line dialogue plus an additional three vocabulary items only.
- the level of the English learning content. This was too high and, as a result, the level of the content was lowered with the majority of lessons now at beginner, elementary and pre-intermediate levels.
- the topics. At times, users were unable to relate to the topics of the lessons and requested content which more closely reflected their daily lives (e.g. the village fair, Bangladeshi festivals and cricket).
- the accents for the delivering the target language. These were originally native speaker British accents, but were unfamiliar to users and were causing problems with comprehension. Moreover, the target audience was more likely to need to communicate in English with non-native speakers of English (especially from neighbouring Asian countries) than with native speakers. For this reason, fluent Bangladeshi speakers of English with accents more familiar to users were introduced.
- the style and tone of the Bangla. This was initially too ‘bookish’ and not widely accessible resulting in users not being able to follow the lessons and misunderstanding instructions. Copywriters and copyeditors experienced in Bangla for mass communications were brought on board to develop a style of Bangla more widely accessible to people from the lower socioeconomic classes and in line with brand guidelines.

Over time pre-testing of new content and monitoring audience reactions has evolved into not only testing all the above features of the lessons, but also testing:

- reactions to the voice of the presenter and the characters.
- amount of repetition.
- speed of delivery of both the Bangla and the English.
- ability to recall the target language.
- level of engagement.
- language of encouragement used.
- relevance of the language.
- ability to understand the context in which the language is set.
- level of interaction (e.g. to what extent users answer questions aloud or repeat aloud when requested to do so).

The main challenge in creating a user friendly mobile service is to create a synergy of all components of an m-learning service – brand, functionality, usability and content. The biggest challenge is to integrate all of these into one user friendly package and, at the same time, continue to monitor the service and find out users' reactions and opinions. The BBC Janala *Amar Engregi Course* was developed directly in response to feedback from users who, rather than lesson series which focused on one aspect of language (e.g. vocabulary) or on different contexts whereby language is used (e.g. English for Work), wanted a complete course package which:

- covered different aspects of language (conversation, vocabulary, grammar and pronunciation).
- included both general English and English for work.
- had an entry and exit point.
- enabled them to move through lessons with clear progression.
- had an in-built tool for self-evaluation and tracking of progress.
- offered some kind of end of course reward (hence the end of course report on completion of all lessons and quizzes).

In a country, where feature phones and voice calls dominate the lower SEC market and where people 'talk' more than 'type', it is not an easy task to take users through a course as they need to occasionally press buttons in order to repeat lessons, request SMS lesson summaries or complete quizzes. Despite rigorous pre-testing of the course, from recent telephone interviews conducted on actual users of the mobile course after launch, it was discovered that people want more freedom and interaction in choosing the right content for them. In other words, they want to skip lessons with language they already know or miss out lessons which they do not find relevant to their daily lives and move straight to the quiz. However, this requires more complicated IVR navigation that users are not always comfortable handling. Therefore, even though the service has been refined and modified in response to continuous research into audience reactions and feedback, there are still obstacles to overcome.

Additional challenges

Technology moves quickly and in a nine-year programme, there are bound to be many changes to the kind of technology the core target audience has access to and how users interact with that technology. From BBC Media Action's own research, an IVR based service is still the most appropriate way to deliver content to its core target audience, but this may change in the future. A recent GSMA survey on young people in Ghana, India, Morocco and Uganda identified a similar situation to that of Bangladesh in that "although smart phones and data enabled devices are beginning to make an impact in emerging markets, voice calls remain the most used and favoured service: 85% of young mobile users made voice calls every day, and 67% of respondents believe that calls would be the most desirable method for receiving content such as educational information" (GSMA, 2012, p.5).

Another challenge is to assess to what extent English language competency is actually improving as a result of interaction with the mobile phone service. Research from panel studies (BBC Media Action, 2011) suggests that English skills are being developed, but more comprehensive studies involving greater numbers of users are needed. Following a large scale baseline competency testing of 1,700 viewers of the BBC Janala television game show, *Mojay Mojay Shekha* ("Learning with Fun"), a large scale baseline testing for users of the BBC Janala *Amar Engregi Course* on mobile is now being designed and is due to be carried out at the end of 2012/beginning of 2013.

The BBC Janala mobile phone service is currently donor funded, but the issue of sustainability when funding ends also needs addressing. Recent research into the digital English language teaching (ELT) market in Asia reports that by 2016 ELT digital products could potentially gross $1.4 billion with mobile operators being major ELT content distributors (Ambient Insight Research, 2012). As the project proceeds, it will be necessary to develop partnerships which will enable BBC Media Action to pass the mobile service to a commercial entity, whilst retaining a focus on the broadest target audience possible.

It can thus be seen that the challenges the BBC mobile phone service faces now and in the future include:

- giving users the freedom they want they without compromising the ease of usability. As mobile technology becomes increasingly more familiar to users and technological skills improve amongst people from lower socioeconomic classes this dilemma may resolve itself.
- monitoring and keeping up to date with the target users' behavior and technology adoption by tapping into industry expertise and knowledge and continuing to interact with users, test prototypes and track data. As users adopt more sophisticated mobile technology (e.g. data enabled devices) and become more familiar with handling mobile technology, the kind of service and content BBC Janala provides will have to respond to this.
- persuading users to keep coming back to the service.
- continuing to monitor why people drop out.
- sustainability of the service when funding ends.

Conclusion

To sum up, in the case of the BBC Janala, there have been many key factors which have contributed towards the success of the service including:

- availability of funds supporting the initial business model.
- formative research which identified a demand to learn English in Bangladesh.
- formative research into the feasibility of a mobile service to satisfy some of the demand.
- developing a strong brand which reflects the values of the core target audience and positioning the brand in the marketplace.
- promotion and cross promotion of the service.
- ongoing relationships with the regulatory commission, mobile operators and experts in the telecommunications sector in Bangladesh.
- rigorous one to one interactions with potential users to test usability, functionality and content and innovative prototype / content testing.
- continuous monitoring of audience reactions and continuous tracking of data.

Sector expertise, strong relationships with the local telecommunications industry, extensive up to date knowledge of the target audience, rigorous user testing and continuous monitoring and tracking of data should be essential ingredients for any mobile service, but especially for services aiming to deliver educational, health or other kinds of content to people from the lower socioeconomic groups of a developing country.

REFERENCES

Ambient Insight Research. (2012). Retrieved 3 October 2012 fromhttp://www.ambientinsight.com/News/Ambient-Insight-2011-2016-Asia-Digital-English-Market.aspx

Bangladesh Telecommunication Regulatory Committee (BTRC). (2012). Retrieved 15 September 2012 from http://www.btrc.gov.bd/index.php/telco-news-archive/509-mobile-phone-subscribers-in-bangladesh-january-2012

BBC Media Action (formerly World Service Trust). (2009). *English in Action BBC Janala baseline research synthesis*. Dhaka: BBC Media Action.

BBC Media Action (formerly World Service Trust). (2010). *BBC Janala mobile content user testing reports*. Dhaka: BBC Media Action.

BBC Media Action (formerly World Service Trust). (2010). *BBC Janala mobile usability and functionality user testing report*. Dhaka: BBC Media Action.

BBC Media Action (formerly World Service Trust). (2011). *BBC Janala mobile content user testing report*. Dhaka: BBC Media Action.

BBC Media Action (formerly World Service Trust). (2011). *BBC Janala mobile usability and functionality user testing report*. Dhaka: BBC Media Action.

BBC Media Action (formerly World Service Trust). (2011). BBC Janala Mobile Phone Learners Panel Report: *How effective is the mobile phone as a tool to learning English?* Dhaka: BBC Media Action.

BBC Media Action (formerly World Service Trust). (2012). *The impact of English in Action media products: midline survey report*. Dhaka: BBC Media Action.

Gartner. (2012). Retrieved 3 October 2012 from http://www.gartner.com/it-glossary/vas-value-added-service/

GSMA Development Fund (2012). *Shaping the future: Realising the potential of informal learning through mobile.* London: GSMA.

Quantum Consumer Solutions Ltd. Bangladesh. (2012). *BBC Janala Brand Equity Study*. Dhaka: Quantum Consumer Solutions Ltd. Bangladesh commissioned by BBC Media Action.

ENGLISH IN ACTION: USABILITY AND SUSTAINABILITY OF AUDIO-VISUAL MATERIALS FOR ENGLISH LANGUAGE TEACHING IN BANGLADESHI SCHOOLS

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Abstract

Audiovisual materials are being used all over the world for language teaching and learning. In Bangladesh, the English in Action project (EIA), as part of its teacher development program, introduced a large number of audiovisual materials (AV) which were designed for primary and secondary school English teachers to be used in the classroom as well as for their own professional development. . As a nine-year English language project, English in Action aims to ultimately reach 80, 000 teachers and 10 million students by 2017. However for the long term success of the project there is a need to ensure the large scale usability and sustainability of the AV content being used.

This paper provides details of the project intervention and its impact so far, as well as the contextual background of Bangladesh, its education system and the use of technology for education as well as considering the use of audio-visual materials for English language teaching (ELT).

Keywords: English in Action [EIA], Bangladesh, 2nd language, English Language [EL], technology and education, Audiovisual [AV] contents, teacher professional development, mobile phone.

1. Introduction

Bangladesh is a small country (147, 570 square kilometers) but one of the most densely populated with a population of 160 million. The official and dominating language is Bangla spoken by 98% of the people, hence often the only medium of communication at the personal, social level and within media and education. However increasingly more people are learning to communicate in English.

2. English Language in Bangladesh

In Bangladesh, primary education, grades 1-5, is free of cost and compulsory for all children aged 6 and above. English is a compulsory subject in both primary and secondary schools (from grade 1 to 12), however, in most cases teachers use Bangla as the medium of instruction to teach English in the classroom. Across Bangladesh schools use the government prescribed textbooks for teaching of all subjects including English. The English Textbook, 'English for Today', has been developed using the communicative language Teaching (CLT) approach, however it lacks emphasis on listening and speaking practice in the classroom. Moreover, there is no assessment system to asses speaking and listening skills of the students. The students are assessed, through written assessment, 2 to 3 times a year. The majority of the secondary teachers have degrees in English Language and literature, but very few of them have English language teaching (ELT] background. On the other hand most of the primary teachers do not have any background or qualification to teach

English. They come from different academic backgrounds and take English classes along with many other subjects (Bangla, science, mathematics, etc.).

In Bangladesh, learning English language for personal, academic and professional development is highly encouraged, but using English language in the society or in the family or in the media is not encouraged at all. People always encourage using Bangla for social communication even through internet

3. Use of Audio-visual in Bangladesh

Bangladesh has been exposed to the film medium almost from the beginning of its invention [1898] and familiar with television for many decades [from 1964]. Film and television media is the most popular media in the Bangladeshi society and almost all parts of the country have access to AV media [film and TV].

Audio-visual contents are widely being used in Bangladesh for social education i.e. awareness building, health and social campaign and to some extent for professional development in the field of nursing and medical trainings. But the language used for educational AVs have been Bangla. Some AV resources for IELTS/TOEFL were also available in Bangladesh for decades, but were not contextualized for local use and to some extant expensive for the learners.

Use of audiovisual materials for formal education in Bangladesh started around 2005 by some (I)NGOs and Government institutes for teaching science, mathematics and English within schools. These were primarily different types of pilot projects, on a small scale, and to date many agencies have been experimenting and have not been able to go national scale. However a recent example of a project, which has the potential of achieving scale and is currently using AV materials, is English in Action for improving communicative English of adults, children and teachers through media and schools intervention.

4. English in Action project

English in Action is a nine year English language education programme consisting of 3 phases: (1) Pilot phase, (2) Scale up phase and (3) institutionalization phase. This project is funded by UKAID and implemented by the Government of Bangladesh. BMB Mott MacDonald, a Dutch company is responsible for management of this project where two international agencies BBC Media Action and the Open University, UK and two local NGOs; Underprivileged Children Education program (UCEP) and Friends in Village Development Bangladesh (FIVDB) are part of this consortium.

By 2017, English in Action project is intending to reach 25 million learners through three different components (1) primary teachers and students (2) secondary teachers and students and (3) adult learners.

EIA adult learning component is managed and implemented by BBC Media Action. BBC uses television and mobile phone contents as a tool for adult and distance learning of English language amongst the adult population of Bangladesh. This paper however focuses on the schools components [primary and secondary] of the project.

According to Bangladesh Bureau of Educational Information and Statistics (BANBEIS, 2010) the number of primary schools in Bangladesh is 82,674, where the number of teachers is 225,035 (male: 48.59% and female: 51. 41%) and number of students is about 17 million (16,904,546, girls: 50.50%, boys: 49.50%). On the other hand there are fewer secondary schools, 19, 040, with more than 7 million students (7,029,929, girls: 53.44%, boys: 46.56%) and 205,770 teachers (male: 77.4%, female: 22.6%). Working with these numbers, EIA has a target of covering more than 49.38% students, 21.15% of teachers from more than 53.42% of schools by 2017

5. Teacher training and support within English in Action

English in Action has a model through which 16 months of intensive teacher training and support is provided to teachers participating in the project on pedagogy and Communicative Language Teaching (CLT). This includes a three day long launch workshop at divisional level conducted by a cadre of trainers 'Core Trainers' and CLT experts. This is followed by bi-monthly workshops (cluster meetings) at local sub district level, conducted 'teacher facilitators' who are government school teachers elected specifically by the project and trained to support the teachers. EIA teacher training and support programme also includes training and orientation of Head Teachers to ensure their support for teachers and provide required leadership and management. The project also has a very rigorous monitoring (quality assurance) component which involves the local Education Managers visiting schools for classroom observation.

6. English in Action materials for primary and secondary school teachers

To date, English in Action has produced 916 audio files, 95 video clips, 17 books, 76 posters and 992 flashcards for its primary and secondary interventions. This package of primary and secondary materials includes:

a) Audio based classroom materials

452 Interactive and textbook based audio lessons for classroom use in primary schools have been developed that include instructions for students, stories, dialogues, songs, rhymes and games. Each of these primary textbook lessons has a series of audio files for use across 2-3 lessons, to be played during English lessons. On the other hand, there are 227 Secondary textbook based audios lessons that include stories, dialogues, listening passage and poems also to be used during lessons.

b) Teacher Professional Development materials

Audio and video based teacher professional development (TPD) materials include 38 primary and 24 secondary module based video clips linked with 8 modules in the EIA Teacher Guide (TG). Each of the primary and secondary teacher guide module discusses specific EL content for classroom teaching and learning, i.e. speaking, listening, assessment etc. Module based video clips include video activities on specific issue in a real classroom situation and a short narration and description of that particular activity and its usability in the classroom. This TPD video package also includes 26 primary and 7 secondary videos on additional classroom techniques to help teachers to choose the activities that fit best with their own classrooms.

The TPD audio package includes a series of Teachers Talking audio files [8 files for each] for both primary and secondary teachers, based on the 8 Teacher Guide (TG) modules. It is a package of recorded discussions on several classroom situations, solutions and teaching techniques based on of experiences of teachers participating in the pilot phase of the project. EIA TPD audio package also include 8 sets of primary and 27 sets of secondary classroom language audio files based on 8 TG modules to help teachers to find suitable English sentences and phrases to use in their classrooms.

c) English Language for Teachers (EL4T)

English Language for Teachers (EL4T) is an audio lessons based self study material to enhance English language competence of the primary and secondary English teachers. It includes two separate courses for primary and secondary teachers consisting of 30 units of primary and 30 units of secondary audio based learning activities supported by print based workbook exercises. The lessons are completely based on government prescribed school textbook contents and contexts, focused on listening and speaking skills. The duration of each learning activity is approximately 30 minutes. This language course also includes 25 additional audio files for pronunciation practice and 38 audio files for files for additional vocabulary practice, produced by BBC Media Action.

7. EIA technology: mobile phones for AV contents

Currently, the AV material discussed above are loaded onto a 2GB micro SD card which fits into the Nokia C1-01 mobile phone. All teachers participating in the project (currently 4000) have been provided with these as well a portable rechargeable amplifier. The teachers use their Nokia mobile for playing audio and videos for classroom use and for their professional development purpose. The reason behind selecting mobile phone as an education tool is, in Bangladesh, mobile technology has already reached more than 97% of the total population and the number of mobile phone users in the country is 95.53 million (BTRC, 2012]. Almost all teachers are mobile phone users and mobile phone maintenance facilities are available all throughout the country. Moreover, compared to other devices, mobile phone is the most cost effective device for playing audio and video (£38).

8. Some achievements from pilot phase

In order to investigate into the impact of the pilot phase of the project, (2008–2011), which involved 600 government English teachers (from 300 schools) and 90 English teachers from non-governmental schools, a number of studies were undertaken after 4 months (2010) and 12 months of the intervention (2011). These were carried out to identify the extent of change in English teachers' classroom practice and English language competence of both students and teachers as a result of their participation in EIA. The methods used and findings obtained from these studies are discussed next.

a) Teachers classroom practice studies

The two studies investigating classroom practice were large-scale quantitative surveys. Data for the first was collected in June 2010, 4 months after the

intervention, and for the second in February and June 2011, 12 months after the intervention. The sample size used (Table 1) in 2010 covered 79% of the teachers participating in the project and 54% (49% primary and 65% secondary) in 2011.

Table 1: Sample size for classroom practice studies (2010, 2011)

Sample	2010	2011
Primary teachers	350	195
Secondary teachers	141	129
Total	491	324

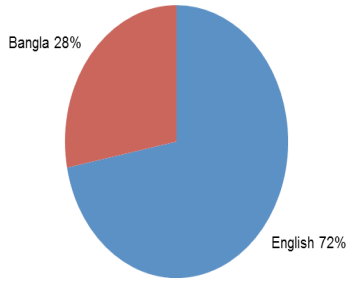
For the purpose of undertaking classroom observation a specifically designed observation schedule was used. During the design of this instrument similar work for measuring classroom interaction and aspects of communicative language was consulted from literature (e.g. Malamah-Thomas 1987; Spada 1990). Data for the 2010 study was collected by 56 Teacher Facilitators (a cadre within the EIA project to train teachers) and for 2011 15 MPhil (ELT) students from University of Dhaka. In both instances written guidelines (in English and Bangla) and comprehensive training was provided by the Open University staff. Before data could be collected access to schools and teachers was negotiated and permission obtained from the Head teachers, teachers and students.

The duration of classes observed varied, ranging from 40-45 (2010) minutes in length and 30-50 minutes (2011). At one minute intervals of the observed lesson the researchers recorded what the teacher was doing and in what language (English, Bangla), (presenting, organising, asking questions or giving feedback) and what students were doing and in what language (speaking, listening, reading or writing). If the students were observed to be talking then the researchers also recorded if they were speaking alone, in pairs, groups or in chorus.

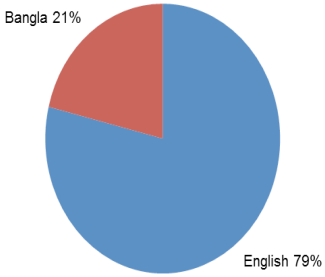
The findings from the classroom practice studies were encouraging and showed not only a change but a sustained change in both primary and secondary classrooms. These are presented in detail below.

The data from the 2010 study showed that both primary and secondary school teachers and students were not only talking more during their English lessons but most of this talk time was in English. Primary school teachers were talking for almost one third of the lesson time and secondary for 50%, while student talk time for both primary and secondary was around a quarter (25%) of the lesson time and this was found to be sustained after one year of intervention. When teachers were talking most of this talk was in English, almost three quarter of the time (primary 72%, secondary 79%) (Graph 1 and 2) and this had been maintained when observed after one year of the intervention. This is a stark change to the situation identified through baseline surveys undertaken prior to the project intervention in 2009, which showed that primary teachers for example were talking only 27% of the lesson time and even this was in Bangla.

Graph 1: Primary teachers talk time in English



Graph 2: secondary teachers talk time in English



The teachers were observed to be involved in various types of activities which when categorized included presenting, asking questions, organizing and giving student feedback (Table 2) which is a contrast to the observations in the baseline surveys (2009). They were spending time asking questions, and giving feedback which indicates that they are making efforts to involve students in interactive and communicative activities rather than just reading and presenting to them from the textbook. For both primary and secondary teachers the amount of time spent presenting during the lesson increased when observed after one year, whereas there was a slight reduction in the amount of time spent asking questions and the greatest reduction was seen in the amount of time spent giving feedback by both primary, from 19% in 2010 to 11% in 2011 and secondary teachers, 24% in 2010 and 10% in 2011, reduction by 14%.

Table 2: Nature of English teacher's activities

Primary teachers			Secondary teachers		
Teacher activity	2011	2010	Teacher activity	2011	2010
Presenting	40%	23%	Presenting	45%	30%
Asking questions	27%	28%	Asking questions	23%	26%
Organizing	22%	27%	Organizing	22%	20%
Giving Feedback	11%	19%	Giving Feedback	10%	24%

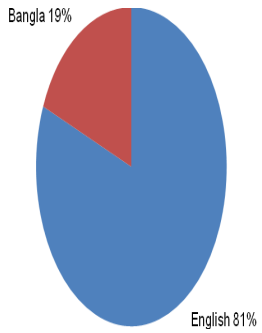
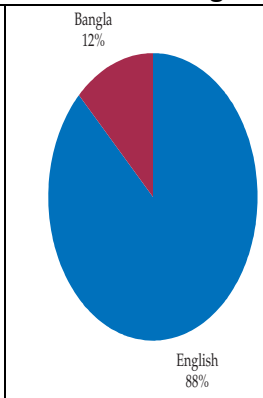
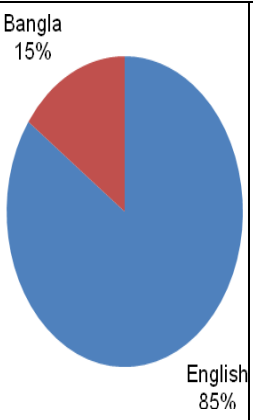
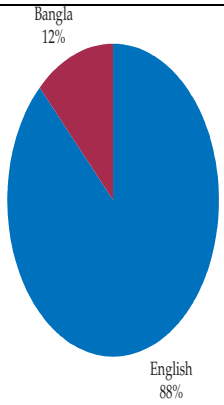
The language used by both primary and secondary teachers during the classroom activities mentioned above was mostly English (Table 3). After just 4 months of intervention (2010) primary teachers were presenting, asking questions and giving feedback in English for almost 70% of the time. This was slightly higher for secondary school teachers at almost 80% when presenting and asking questions while it was slightly lower at 75% when giving feedback. The proportion of time spent speaking in English by both primary and secondary teachers increased after one year across the activities, in particular for giving student feedback. Primary school teachers were giving 83% of their feedback in English as opposed to 68%, whereas secondary school teachers were giving 81% of their feedback in English as opposed to 75%.

Table 3: Amount of English and Bangla used during classroom activities

Primary					Secondary				
	2011		2010			2011		2010	
Teacher activity	% English	%Bangla	% English	%Bangla	Teacher activity	% English	% Bangla	% English	% Bangla
Presenting	71	29	66	24	Presenting	81	19	80	11
Asking questions	72	28	69	22	Asking questions	79	21	80	8
Organising	66	34	55	33	Organising	71	29	74	16
Giving feedback	83	17	68	24	Giving feedback	81	19	75	13

The amount of student talk in general increased by around 25% and most of this talk was in English. Primary school children spent 88% of their talk time speaking in English after 4 months of intervention while this was slightly reduced by 7% to 81% (Table 4) when observed after one year. Secondary school students were observed to be talking in English 88% of time after 4 months of intervention and this was slightly reduced to 85% when observed after one year. However as compared to pre-intervention baseline studies where students were found to be only talking in Bangla, this is quite an achievement.

Table 4: Amount of student talk in English and Bangla

			
Primary students 2011	Primary students 2010	Secondary students 2011	Secondary students 2010

When students talked they were observed to be doing this either on their own, through pair, group work or in chorus. This range of activities indicates the efforts being made by teachers to provide students opportunities to actively participate in discussions and engage in lessons rather than remain passive recipients of teacher talk (observed in the 2009 baseline studies) (Table 5).

Table 5: Type of student talk

Primary school students			Secondary school students		
Type of student talk	2011	2010	Type of student talk	2011	2010
Single	38	30	Single	50	39
In pairs	5	14	In pairs	15	31
In groups	4	16	In groups	13	26
In chorus	53	40	In chorus	23	3

The findings revealed that both primary and secondary school students were speaking more on individual basis, in pairs, groups and chorus when observed after 4 months of intervention. Primary school students were particularly talking more in chorus (40%) and individually (30%) while also talking in group and pair work but to a lesser extent. However, secondary students were much more involved in talking individually as well as in pairs and groups but to a lesser degree in chorus. After one year of intervention observations showed that primary and secondary school students were talking more individually and in chorus (Table 5) but far less in pair and group work (around 5% primary, a reduction of 10% and 15% secondary, a reduction by 50%).

For each type of student talk it was found that English was used for majority of the time both after 4 month and one year of intervention (Table 6). Primary school students were observed to be talking more in English when working individually (80%) and in chorus (85%). However after one year of intervention students were speaking less in English when working individually, and in groups while there was a slight increase when working in pairs and chorus. Secondary school students were observed to be talking more in English when talking in chorus as with primary after 4 months of intervention. After one year of intervention a higher degree of increase was observed in students talking in English individually, in pairs and in chorus than observed in primary. While there was a slight reduction, by 2%, in the amount of secondary student talk in English when working in groups, more reduction, by 6% was observed in primary students talk.

Table 6: Amount of student talk in English and Bangla

Primary					Secondary				
	2011		2010			2011		2010	
Type of student talk	% English	% Bangla	% English	% Bangla	Type of student talk	% English	% Bangla	% English	% Bangla
Single	74	26	80	13	Single	88	13	71	10
In pairs	82	18	79	11	In pairs	92	8	69	12
In groups	70	30	76	14	In groups	70	30	72	17
In chorus	87	13	85	8	In chorus	83	17	76	2

b) English proficiency assessment studies

The studies on EL proficiency (EIA 2012) were undertaken with 543 teachers (367 primary and 176 secondary) and 7,239 students (4,630 primary and 2,609 secondary) in 2010, and 1,102 students (785 primary and 317 secondary) and 317 teachers (230 primary and 87 secondary) in 2011 (Table 7).

Table 7: Sample size used for English proficiency assessment studies

Sample	primary school students	Primary school teachers	Secondary school students	Secondary School teachers
2010	4630	367	2609	176
2011	785	230	317	87
Total	5415	597	2926	263

In both studies, teachers and students were assessed by independent evaluators form Trinity College (London) using the Trinity College Graded Examinations in Spoken English (GESE). The participants were interviewed by the assessors and assigned a Trinity grade (1-12) indicating their English proficiency. The interviews lasted between 10-15 minutes.

The studies showed an increase in both student and teacher proficiency in spoken English. In 2011, both teachers and students performed better and obtained pass grades after participating in EIA, compared to very low achievement levels in the baseline study undertaken prior to the project (2009) in which most teachers and students failed to achieve any pass grade against the Trinity scale.

Almost all primary teachers achieved the English language (EL) competence to teach Class 3, while the secondary teachers achieved the EL competency to teach Class 6. This was not the case when the teachers were initially assessed in 2010 where less percentage of teachers obtained higher grades (Figure 2). It is significant to note there was a gender difference in performance in favour of male teachers who outperformed their female counterparts. Additionally, those in rural schools tended to perform worse than those in urban schools. As can be seen in Figure 2 and 3, the percentage of teachers achieving higher trinity grades has increased from 2010 to 2011.

Figure 2: Primary teachers

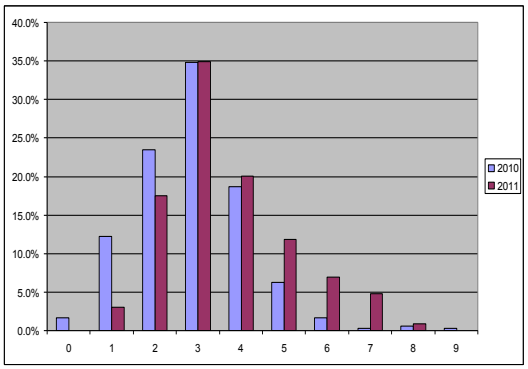
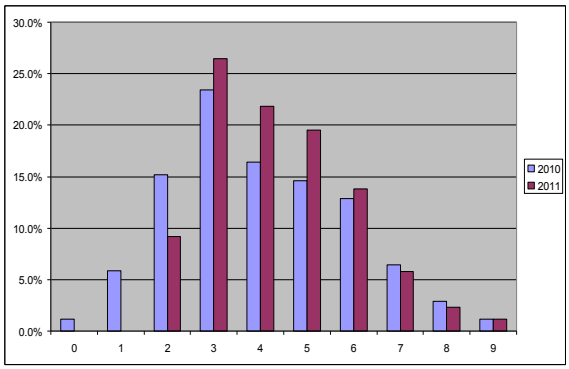


Figure: 3 Secondary teachers



The same is true for students, as shown in Figure 4 and 5, where the percentage of both primary and secondary school children at each of the higher grades has increased from 2010 to 2011. For primary students, prior to the teachers' participation in EIA, 64.3 % of students failed to pass the Trinity's graded examination. In 2011, that proportion fell to 49.9%. In 2010, 35.4% of the students scored initial levels (passing) levels of EL competency and this proportion rose to 50.1% in 2011. In secondary, while the proportion of students who failed (below grade 1) fell from 28.9% to 10.4 % in 2011, the proportion of students who passed at the initial levels (grades 1-3) rose from 61.9% to 66.6%. The percentage of students passing at the elementary level (grade 4-6) rose from 9.2% to 22.4 % – a considerable increase.

Figure 4: Primary students

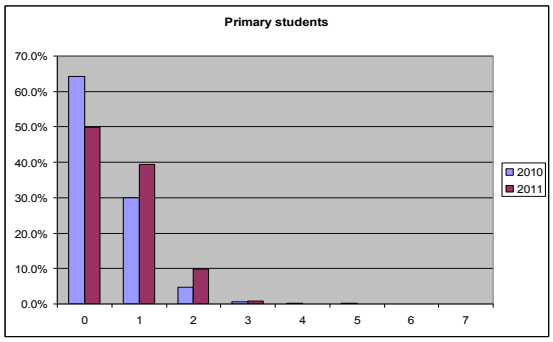
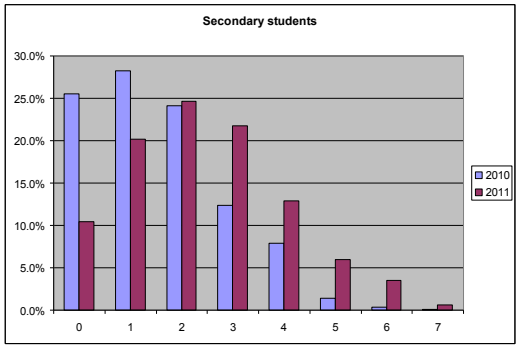


Figure 5: Secondary students



9. Sustainability plan: present and future

According to the project plan the institutionalization and sustainability phase is due to begin in 2014 with project completion in 2017. However considering the importance of this for upscaling English in Action has already started working towards modifying its approaches. So far the plan focuses on integrating EIA methods and materials in the formal pre and in-service training though Teacher Training institutes. This has began with primary pre service: Diploma in Primary Education (DPEd) programme., creating ownership and building capacity of other organizations to take over materials development activities in the future and m*otivate teachers to use their own mobile phones for teaching and learning* in future. However there are still major challenges related to the sustainability of materials and methodologies i.e. teachers can use their own mobile phone but who will take the responsibility of supplying speaker after project life for classrooms or, who will take the responsibility of replacing or updating electronic contents for

teachers' mobile phones? And how? Some other questions which the project will need to tackle include:

- What could be the proper storage mechanism of contents after project life? [finding and downloading issue]
- What could be the proper process for finding new/appropriate contents?
- What should be the mechanism for the development/collection of new contents?
- How can we embed these materials in GOB system

Conclusion

In this paper the audio video materials being used for teacher development and classroom use for developing communicative English language skills has been discussed. Also discussed has the impact of the project so far as a result of implementation during its pilot phase. While the materials being used are seen favourably by teachers there a still challenges which need to be addressed if the project benefits are to be sustained and scaled to a national level within Bangladesh.

References

BTRC: Bangladesh Telecommunication Regulatory Commission: http://www.btrc.gov.bd/

BANBEIS: Bangladesh Bureau of Educational Information and Statistics, Ministry of Education: http://www.banbeis.gov.bd/webnew/

English in Action, Baseline Study, 2008. An audit of current materials for teaching English in Bangladesh. Available from: http://www.eiabd.com/eia/baseline/Baseline%20Study-4.pdf

English in Action, Research Brief 2012. Changing practice in the classroom. Available from: http://www.eiabd.com/eia/file_zone/publications/r_brief/Changing_Practice_in_the_Classroom_30-04-2012.pdf

English in Action, Research Brief 2012. Improving English Language competence in schools. Available from: http://www.eiabd.com/eia/file_zone/publications/r_brief/Improving_English_Language_Competence_in_Schools_30-04-2012.pdf

Hayat, A. A Brief History of Bangladesh Cinema: Available from: http://www.bangladesh.net/cinema/Bangladesh-Cinema.html

Power, T. Shaheen, R, Solly, M, Woodward, C., (2012) 'English in Action: School Based Teacher Development in Bangladesh', *The Curriculum Journal*, 23(4) (forthcoming).

MOBILES FOR TEACHING (AND LEARNING): SUPPORTING TEACHERS WITH CONTENT AND METHODS FOR READING INSTRUCTION

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Educational innovations in developing countries are expanding as stakeholders shift from a focus on *access* to *quality*. In this paper, we present custom, tablet-based tools designed to help teachers capture, analyze and use results from reading diagnostics to improve teaching quality. Individual, timed, oral assessments of reading are increasingly being used to raise awareness of the low quality of reading instruction and achievement in low-income countries. Historically, though large-scale assessment results have been used to shape education policy, teachers themselves are rarely privy to their own students' assessment results – much less so within a timeframe allowing immediate corrective measures in the classroom. RTI International developed an electronic tool optimized for low-cost mobile devices used to improve the quality and efficiency of these national-scale surveys. Following the successful adoption of the core platform, known as *Tangerine*™, RTI embarked on the development of complementary teaching tools for classroom use. One such tool, *Tangerine:Class*, assists teachers in systematically collecting, analyzing and using specific and progressive measurement of students' reading achievement to inform their teaching. Additionally, digital teaching materials and a 'virtual coach' provide rich, real-time support for teachers working to change their practice. We provide findings on the use of Tangerine for large-scale reading assessments, and specific country projects in progress to describe how the choice of a flexible design of the core software is sparking a variety of add-ons that address specific contextual challenges in the delivery of reading instruction. As early grade reading assessments raise awareness of the low levels of achievement, new reading programs require reaching thousands of practicing teachers with curricular materials and pedagogical support. We argue that low-cost mobile devices equipped with appropriate and tailored tools can be effective and efficient vehicles for reaching large numbers of teachers and supporting them consistently in order to attain the high-quality delivery of reading lessons throughout the school year.

Keywords: reading, mobiles, tablets, open-source, assessment

Introduction

Historical overview

Mobile learning for teacher-training in international development is not a new concept, although it is getting increasing attention as mobile devices become more pervasive, more powerful and more affordable. Prior to 2000, mobile learning generally referred to mobile libraries, or mobile classrooms, even mobile teachers for nomadic populations (Lucas, 2002). Possibly the earliest instance of the term "m-learning" was in a paper, authored by a Finnish researcher, Jarmo Viteli from the University of Tampere (Viteli, 2000). An important early m-learning project sponsored by the EU was carried out from 2001-2004 involving trials the UK, Italy and Sweden (Atwell, 2005). This project developed content targeting young adult learners with low literacy and numeracy and provided some of the earliest lessons learned in hardware, software and implementation of m-learning programs in a developed country context. Shortly thereafter, from 2005-2007, the Open University (United Kingdom) began exploring the use of m-learning in the context of less developed countries to address the quality of teacher training and student learning under the DEEP project (Digital Education Enhancement Project). The technologies applied in South Africa and Egypt included laptops, handheld computers, and digital cameras, which were used to for school-based professional development activities. The project resulted in many examples demonstrating technology as a catalyst for changing classroom dynamics and learning methods, not just as container for delivering content[12].

m-Learning experience during this time was not limited to Europe; in 2005, Asian Development Bank (ADB) had organized a workshop on m-learning in the Asia-Pacific region to encourage partner countries to formulate m-learning plans. At this time participants noted that m-learning could be used, among other things, to increase access to educational opportunities by reaching out to underserved, rural populations where distance or other obstacles present a barrier to accessing formal learning centres and to enhance the quality of teaching by providing a mechanism for initial training, continued professional development, and connection with other teachers (UNESCO, 2005). On the contrary, m-learning in North America, particularly the United States, seemed linked more directly to the expansion of wireless and 3G technology allowing for a range of 'always connected' products and services. However, mobile adoption, and was 'behind the curve' compared to other European or Asian contexts (Wagner, 2005) and subsequently m-learning evolved primarily in higher education as more of a commercial response to a new market opportunity.

In a 2008 literature review of m-learning for teacher training, Pouezevara and Khan (2007) note that m-learning was typically used to describe learning while 'on the move', outside the formal school environment. The most common forms of m-learning at the time were personal digital assistants (PDAs) and mobile phones with basic voice, text and photo capabilities. The benefits described in the literature were

[12] See project website, http://www.open.ac.uk/deep/Public/web/caseStudies/wholeLearner.html

the convenience and immediacy of learning that the technology enables; and the motivation that comes from being empowered to take learning into one's own hands (literally!). JISC, in their more recent m-learning InfoKit (JISC, 2012) have compiled a list of 18 "tangible benefits" of mobile learning. These can be categorized into four main themes: *accessibility* (access to learning opportunities, experts/mentors, other learners); *immediacy* (on-demand learning, real-time communication and data sharing, situated learning); *personalization* (bite-size learning on familiar devices; promotes active learning and a more personalized experience); and *intelligence* (advanced features make learning richer through location-aware features, data capture, multimedia). With the exception of the "Intelligence" category, it is clear that m-learning is about the mobility of the learner, not about the device. Yet this does not mean that m-learning should be designed only for independent learning; it can also encourage collaborative learning by linking learners in different locations (Pouezevara and Kahn, 2008; Atwell, 2005)

Table 1: Broad categories of benefits of m-learning

Author's categorization	Tangible benefits, according to JISC, 2012
Intelligence	Abstract (representational) and concrete (environmentally-situated) knowledge can be integrated
Intelligence	Allows data to be recorded and learning processes captured wherever they happen.
Intelligence	Contextualisation through location-aware features such as GPS.
Accessibility	Reduces technical barriers to e-learning
Accessibility	Pervasive and ubiquitous
Accessibility	Increases accessibility for learners with special educational needs
Accessibility	Access to mentors, tutors and others learners on-the-move.
Accessibility	Allows access to learning by those in dispersed communities and isolated situations
Accessibility	Enable new learning environments
Accessibility	Peer-to-peer networks make learning more student-centered.
Immediacy	Encourages reflection in close proximity to the learning event
Immediacy	Immediacy of communication (including speech and data-sharing)
Immediacy	Fit into the lives of learners (allow for productive 'dead' time - e.g. when travelling or queuing
Immediacy	Portable - allow anywhere, anytime learning
Personalization	Personal, private and familiar (reduce perceived barriers to learning)
Personalization	Bite-sized e-learning resources can be delivered to learners (especially useful for basic skills or work-based learning)
Personalization	Perceived as an acceptable way for learners to receive reminders and chasers - and manage their time.
Personalization	Promotes active learning

Therefore, in 2012, it is really no longer a question of whether or not learning *should* be mobile, and which devices will make it so; rather it is a question of how to develop and deliver mobile content that is effective, efficient and engaging. This goes far beyond eLearning, or simply delivering the same content on a different—a mobile—device; as described in Naismith et al., (2004), "mobile technologies should not be viewed as "simply providing more portable versions of the learning activities that are currently supported on more static machines" as the mobility of the device and the learner "adds a new dimension to the activities that can be supported." For JISC this means that mobile learning acts as the 'Trojan-horse' for wider institutional changes. Chris Dede of the Harvard Graduate School of Education provides a complementary analogy when he cautions against education technology simply "putting old wine in new bottles"; he envisions, instead, that we develop "new wine" and even allow the "bottle" to disappear as we access learning without the constraints of classroom time and space. This suggests a number of new ways to think about the "m" in m-learning: *micro*learning, *multimedia* learning, *mastery* of learning[13]. The purpose is not to add to or confound the different definitions of mobile learning, but rather to move the conversation away from broad notions of mobile learning for any and all purposes to more specific guidance on how to implement mobile learning from a pedagogical perspective. Strategies for developing mobile learning content must draw on the features of the device, connectivity infrastructure, user ability, and learning objectives.

A new framework for m-learning content

- **m-Learning = microlearning**

Microlearning is a theory of instructional design that suggests that people learn more effectively if information is delivered in small units that are easy to understand and apply (Habitzel, et al. 2006). The 'micro' level of teaching looks at breaking content into small teaching units or learning objects, and delivering them with a modified pace and timing (Wikipedia, 2012). The concept of microlearning did not emerge from within the context of mobile learning, rather the characteristics of m-learning—using smaller, connected mobile devices independently of classroom time, space, and teachers—and the added value outlined above (accessibility, personalization, intelligence, and immediacy), lend themselves to a microlearning perspective for content delivery and skills development.

From a content perspective, delivering only small units of learning at once is the most feasible way to deliver any content at all on many mobile devices—especially in developing countries—given bandwidth limitations, cost of data transfer, and screen sizes. From a pedagogical perspective, the timing of such micro-units of learning is important for encouraging 'anytime, anywhere' learning, and situating it within the environment where learning will need to be applied later. For instance, a teacher trying to learn new skills or teaching methods can be exposed to a workshop-format

[13] A reasonable additional 'm' would be "motivated learning" (Gorton, 2012). Experience suggests that using technology and being in control of one's own learning through m-learning approaches can increase motivation and engagement. This is particularly true for game-based learning which is increasingly available on mobile phones. This 4th 'm' will not be covered specifically in this paper, however.

course where theories are discussed, and he or she may even practice with peers during the training event. Chances are, the teacher will get back to his or her classroom and continue to teach the same way unless there is someone around to encourage and enforce the new behavior (Guskey, 1999; Abadzi, 2010). However, when the theory or method is delivered to the teacher while they are practicing in the classroom, the teacher has the opportunity to test out new practice, reflect on the experience, ask for corrective feedback and then try again.

This concept of situated, just-in-time microlearning enabled by mobile devices is demonstrated by widespread examples of "apps" and programs such as Voxiva mobile "coaching" services, which deliver daily messages about health and lifestyle to subscribers on their mobile phones. The sequenced and situated nature of the messages appears to encourage behavior change more than one-off pre-natal courses or parenting classes[14]. The market for microlearning is focused on personalization of the learning experience—as a learner you decide where you have the most imminent need for support and can then just access that content from a variety of free or commercial sources.

The intersection of mobile learning with microlearning therefore implies that revisiting training programs and their content and attempting to sequence and deliver that content more appropriately into its microunits is the 'new wine' in 'new bottles' that Dede asks us to imagine.

- **m-Learning = multimedia learning**

Multimedia for teaching and learning is also not a new concept, nor does it apply exclusively to mobile learning. There are many potential sources to support the general use of multimedia for learning, but to frame it in the context of teacher training for development, Burns (2011) summarizes the potential for multimedia to support open and distance learning for teachers in two ways:

- first, the combination of text, audio, video, color and animation and the various "ways" of learning afforded by multimedia may better address teachers' individual learning styles;

- next, drawing on cognitive theory research, multimedia may help all individuals learn more effectively through the "dual coding" of information in which the learner processes text and images simultaneously.

The second point is supported by perspectives from psychology and neurosciences, described by Abadzi (2010), who arguesthat "…humans cannot translate spoken theory or even instructions to movements and decisions. So, teachers may attend and even pass tests, but their classroom behaviors seem uninfluenced by the training content." It is for this reason that she argues that real behavior change can best be brought about by using video to develop "automaticity in teaching skills"

[14] See http://www.text4baby.org/index.php/news/180-sdpressrelease

which minimizes extraneous cognitive load and allows teachers to focus on more reflective practices. Abadzi goes on to describe three ways that video can support teacher training through developing self-modeling skills:

- Informational, imparting content knowledge, such as science
- Feedback on performance, e.g. through the process called microteaching
- Positive self review through role modeling (*"*feed forward", see below)

The use of video for microteaching has been common practice for many years in teacher training programs in developed countries. Now, mobile, digital recording devices and portable USB projectors have made this method more accessible to teachers and teacher trainers in developing countries. Davidson (2011) and Dowrick (2011) describe how clips as short as 30 seconds to 3 minutes long prepared using simple 'flip'-type cameras were sufficient to demonstrate "pivotal" teaching behaviors in a trial in Liberia. Using an approach known as "feedforward" (Dowrick, et al 2006) instructional coaches record a teacher delivering a lesson, then use rapid video editing to create a model example of the same teacher doing the sequence of instruction better. In this way, the teacher is able to visualize his or her ideal future behavior. Short video and audio can be transferred via mobile data networks, or transferred manually between feature phones further increasing the possibilities for effectively using video for individual and peer learning.

While multimedia learning for teachers is not limited to video, other forms of multimedia remain largely untested in teacher training (such as "apps", games, or computer-based learning—including tablet mobile tablet computers), with the exception of audio via radio broadcasts, which, despite being called 'interactive' radio instruction has largely been a one-way, receptive activity. New advances in technology and increasingly affordable devices are changing the way traditional interactive radio instruction is being delivered, making it more interactive and truly 'multi'media by combining radio broadcasts with phone-in or text messages to the show, for example. It can also be more mobile now that radio broadcasts can be recorded and stored on digital media players, overcoming a key limitation of interactive radio instruction (IRI) which is that the timing of radio broadcasts are often inconvenient or suffer from poor sound quality. A pilot in Malawi tested the feasibility of using a portable MP3 player to support pre-service teachers in an open and distance learning training program. The devices combined text display, audio and video playback, FM radio, and photo and video recording all in one low-cost device. The devices were loaded with five weeks of lessons consisting of one or two readings, two videos, and an assignment directing the learner to complete tasks and document their completion using the camera and recorder features of the MP3 player. The results indicated that this was a feasible alternative to radio, that it encouraged peer-to-peer collaboration as well as independent learning on-demand. (Carrier, 2011).

Therefore in addition to being an appropriate pedagogical model on its own, multimedia teaching is also a form of microlearning, if delivered in short, strategic

bursts such as video microteaching or delivering supporting content to practicing teachers. This type of teaching is particularly relevant to teachers in developing contexts who are often placed in schools regardless of the amount and type of training they have received in order to mitigate teacher shortages. Approaching m-learning from the perspective of mobile multimedia opens up possibilities of 'virtual mentoring' and rich multimedia distance learning as an alternative to traditional correspondence-based forms of open and distance learning that are still common in low resource environments.

- **m-Learning = mastery of learning**

It is widely noted that improving instructional quality depends on providing teachers with the training, skills and resources they need in order to improve learning and achievement. What is often overlooked in this basic theory of change (e.g., training leads to change) is that teachers need to be aware of the quality of their own instruction and gaps in their children's achievement in order to address those gaps and apply strategies that work. For Guskey (2002) it is not just a matter of addressing specific skills gaps for certain children—although this is an important reason to do frequent student assessment—rather seeing evidence of change is critical before teachers will adopt new teaching strategies. Guskey's research indicates over and over again that one-off training programs are not enough, but that if

> "those teachers try a new instructional strategy and succeed in helping such students learn, their beliefs are likely to change. Again, the point is that evidence of improvement or positive change in the learning outcomes of students generally precedes, and may be a pre-requisite to, significant change in the attitudes and beliefs of most teachers." (p.4).

There are many ways to carry out student assessment, from short lesson-level quizzes to larger standardized tests, any such assessments can be successfully conducted without technology. The challenge is making use of the results. The use of measurement for results requires that the results be accessible and easy for the teachers and those who supervise them to use to inform their own instruction. It is also helpful if the results can be used to underpin communication with parents and communities, as well as national politicians (Crouch, 2011). Too often, results from national standardized tests remain at the national level, and teachers rarely get the feedback on performance, much less feedback that is more specific than classroom averages. Furthermore, it can sometimes be months, if not years, before the results of large national assessments are made available, at which time it is too late to change instructional practices—at least for that set of children (Strigel, 2011). "Data-driven approaches make it possible to study learning in real-time and offer systematic feedback, both to students as well as teachers," was one of the key points of a recent Brookings Institution conference on data analytics and web dashboards in the classroom. (Brookings Institution, 2012)

The same technologies that allow us to introduce new forms of content delivery and learning can also change the way learners are assessed. In distance or mobile learning environments, assessment is likely also going to be mobile. However,

traditional teaching and learning environments like those often encountered in low-resource classrooms can also benefit from mobile forms of mastery checking that allow instantaneous viewing of results, aggregating results over time, and presentation of results and progress over time in simple, easy-to-understand graphics. The power of mobile computing allows sophisticated 'data-mining' or 'data-analytics' to provide simple insights on student performance and the teaching strategies that got them there.

m-Learning for teacher professional development

These concepts are equally if not more relevant for learners in developing country contexts where access to effective classroom learning is undermined by a severe shortage of teachers, an acute lack of training (UNESCO, 2012) and even lack of motivation to be present daily and engage students appropriately (Abadzi, 2010). Yet the demand for non-traditional skills and improved teaching methods is only increasing. Whereas the JISC categories apply broadly to m-learning for any subjects or learners, UNESCO (2012) provides an overview of global m-learning practices targeted specifically at teachers. The conclusions made about added value that m-learning brings echo categories presented in Table 1, but by far *access*—to educational content, to coaches/mentors, to forms of distance learning, or to communities of practice—is most prevalent in the examples cited. The other three categories—*immediacy*, *intelligence* and *personalization*—are also translated into practice by the use of mobile devices for administrative purposes that support teaching and learning, such as sending reminders to students or parents, tracking absences, communicating progress or 'pulling' information from the users through surveys or quizzes. Nevertheless, a large number of examples cited in the report are from North America or Europe, or middle-income countries in Latin America or Asia. The full benefits of m-learning have yet to reach scale in the most disadvantaged countries, for example, in Africa.

It is in this context that RTI International is approaching the development of content and methods for m-learning. The experimental study described in the remainder of this report target teachers as the learners who need to access information, be in touch with mentors, have visual and auditory stimuli to support new teaching methods. Additionally, teachers also need new ways to assess the mastery of their students' skills. All of these needs can be best facilitated by m-learning in the context of a large country with hundreds of thousands of teachers in need of support, many of whom are in rural areas with little access to or experience with technologies other than mobile phones.

RTI is incubating and testing many of the above-mentioned m-learning strategies in Kenya, under the Primary Math and Reading program, funded by the United States Agency for International Development (USAID/PRIMR). A randomized control trial set up within this project will help determine the relative effectiveness on student outcomes from introducing technology at the teacher level, the student level or the coach level—each treatment group being compared against a control group receiving only the basic instructional improvement program and no additional ICT inputs. The m-learning products have undergone different stages of developmental

validation in Kenya with PRIMR teachers and coaches to ensure that the products meet the needs of teachers and align with the realities of the Kenyan classroom. The remainder of the paper describes some of the technologies being introduced in Kenya and elsewhere and some initial findings regarding product design and usability in the context. The initiatives described here focus on improving the teaching of reading in the early grades, although the concepts and methods can certainly be expanded to other subject areas in the future.

Applying concepts of m-learning in Kenya

The reading revolution

Research across the developing world has shown that worrying numbers of students are not learning to read even within their first 2-3 years of schooling (Gove and Cvelich, 2011). Investigation of the underlying causes of these dismal results has revealed that teachers often do not have sufficient capacity, strategies, or resources to teach reading well, or to be able to assess students and improve instruction (Piper, 2010). Teachers are generally not trained how to teach reading using a systematic, evidence-based approach incorporating methods that draw on the underlying foundation skills required to master reading. Instead, they teach through rote memorization and choral recitation of printed texts, using the same teacher guides year after year, regardless of effectiveness and with little support for understanding *how* to improve. Large class sizes in low-resource schools provide additional challenges to the better understanding of individual students' differences in reading acquisition.

Since 2006, early grade reading assessments (EGRA) have been used to rigorously diagnose national and system level gaps in reading competencies among students in over 50 countries and 70 languages. Adapted and deployed by non-governmental and civil society organizations, governments and donors, results have informed education policy reform and improvement of teacher professional development and pre-service programs from Nicaragua to Nigeria, Pakistan to Papua New Guinea and Sudan to South Africa. EGRA and EGRA-like assessments have helped to spark a reading revolution at the national and global level, but with few exceptions, these tools have not yet reached the classroom teacher. In the absence of simple, reliable assessment tools for teacher use, there is a "lack of quality data on student learning that hinders the development and implementation of supportive classroom action" (USAID, 2011), resulting in students' needs not being met; instruction not being improved; and, ultimately, lost opportunities for students' reading acquisition (Wagner, 2011)

The PRIMR program is addressing these challenges by introducing new teaching content and methods and rigorously analyzing the effects through a randomized control trial. An overview of research design within the PRIMR program is provided in Table 2 (below). The project will work with 80 schools in the Kisumu region to implement three different types of technology that are expected to support early literacy. This group of 80 schools is in addition to the 420 schools in Nairobi and other parts of the country who have already been receiving comprehensive training,

support and instructional materials for improving early literacy in Kiswahili and English for the past year. An integral part of the PRIMR instructional approach is the support provided by a coach who visits each teacher at least once every two weeks to observe lesson implementation and provide feedback, and who organizes and facilitates cluster meetings. The Kisumu schools will also receive this same instructional support such that there is a clear counterfactual with which to judge the added value of the technology.

Table 2: Research design for ICT Interventions (Kisumu province)

Treatment Group (N=20)	PRIMR inst. approach	ICT intervention	Research question
Control	No	None	Does the PRIMR instructional approach improve teaching and learning?
PRIMR + Coach tablets	Yes	Coaches with tablet loaded with m-learning content	Does coaching (and subsequently, teaching) improve when teachers have access to audiovisual models and coaching support at least once every 2 weeks?
PRIMR + Teacher tablet	Yes	Coaches and teachers provided tablet with m-learning content	Does regular, day-to-day access to audiovisual models, reading assessment tools, as well as a more user-friendly teaching guide, improve teaching?
PRIMR + Student e-reader	Yes	Students with e-readers, loaded with PRIMR content and outside books	Does providing children with more reading material improve outcomes?

m-Learning designs for professional development support

- **Digital teachers guides and mobile teacher training support**

In the "Teacher tablet" treatment group noted in Table 2 above, each second grade teacher will be provided with a tablet that contains a digitized version of the reading curriculum and detailed lesson plans for teaching reading every day of the school year. Through digitization, this guide will be enhanced with color, font size and readability, and embedded with relevant multimedia support, including:

- audio recordings of sounds, syllables and stories by Kenyan teachers and children;
- video recordings that model the teaching methods promoted by the PRIMR curriculum; and
- messages from a 'virtual coach' with important reminders and motivational messages to support the teachers in day-to-day lesson delivery.

Optional but complementary teaching aids, including letter and word flashcards, songs, stories, videos and games, are being reviewed and considered for inclusion on the tablet. Additionally, teachers will be able to use Tangerine:Class (see next section) to check the progress on a weekly basis. Coaches in this treatment group will also be given tablets with the same package of digital materials, as well as

electronic versions of their coach observation forms and will be able to use Tangerine for regular spot checks of students' reading achievement and see immediate outcomes and progress over time in different schools. It is important for implementation that the coach also has the same equipment as the teacher in order to provide support and trouble-shooting to the teacher; however, the underlying assumption is that the teacher tablets will be a source of ongoing, immediate instructional improvement by making the lesson plans easier to follow and enhancing content knowledge through audiovisual models. This is demonstrating the *microlearning* and *multimedia* learning approaches to m-learning content development.

The "Coach tablet" group will involve providing the coaches—but not the teachers—with the tablets. In this model, the research question is whether the hands-on, day-to-day exposure (the *microlearning*) to the audiovisual models as well as the digital format of the lesson plans (*multimedia learning*) are what makes the difference. We will be testing whether the immediate and personal nature of the m-learning demonstrated by the teacher-tablet group will have a bigger impact on behavior change than providing only multimedia learning objects to coaches who will engage teachers in use of these materials on a less frequent, but more structured basis.

- **Tangerine and Tangerine:Class**

Tangerine™ is open source data collection software optimized for mobile devices[15]. It records student responses to early grade reading and mathematics assessments. Tangerine uses open source technologies including CouchDB and JQuery, providing compatibility across a wide range of mobile devices and languages and enabling devices to synchronize data with a central database over a variety of connection types. Tangerine was successfully field tested in Kenya in January 2012, and subsequently in Liberia, Malawi and the Philippines. It is currently being used or prepared for use in seven countries and 14 different languages.

The core Tangerine software was developed as an electronic data collection tool for large-scale national surveys. It is upon this core functionality that the first of several planned modular features for classroom use has been developed. Tangerine:Class aims to improve reading instruction by strengthening classroom- and curriculum-based assessment. Tangerine:Class will assist teachers in systematically collecting, analyzing and using students' reading results to inform their teaching through a data capture, analysis and reporting tool and data-utilization guidance—all integrated and provided on a low-cost tablet device.

The current scientific basis of reading acquisition is driven by the understanding that there are (a) five essential components to reading (phonics, phonemic awareness, vocabulary, fluency, and comprehension) (National Institute of Child Health and Human Development, 2010) and (b) that reading is acquired in stages – from decoding to fluency to comprehension (Seymore, et al. 2003). Moreover, across all

[15] Tangerine was developed by RTI International, and under the GNU GPL3 license. For more information see http://www.tangerinecentral.org

alphabetic languages, oral language, phonemic awareness, and alphabet knowledge are needed to develop decoding skills (Sprenger-Charolles, 2006). The scientific understanding of a staged and common (across languages) skill nature of reading acquisition is the underlying conceptual framework that has driven the development of the EGRA approach. The result is "a model that responds to the linguistic characteristics of each language but contains common assessment subtasks to facilitate comparisons across different languages and contexts." (Gove and Cvelich, 2011).

For the classroom level, EGRA is aligned with the theoretical framework of curriculum-based measurement (CBM), specifically for its use for regular mastery checks and progress monitoring assessments. CBM was originally designed for teachers to document growth in student learning and to use data from CBM to assist instructional decision-making, especially in curriculum areas such as reading, writing and mathematics. Effective instruction responds to students' needs in consideration of the curriculum. The administration of reading assessments is essential to gaining understanding of children's current reading ability, the goals for children's reading ability, and the ways instructional practice can bridge the gap between the two. Studies on CBM have indicated that the combination of regular mastery checks that verify students' mastery of short-term goals, longer-term progress monitoring evaluations, and data-utilization guidance is particularly powerful in this process (Fuchs, et al. 1989).

Tangerine will allow teachers to input basic information about the child (name, age, gender) and then conduct regular mastery checks or progress assessments to understand whether the child has mastered the immediate content (in the case of weekly mastery checks) and progress in terms of the basic reading fluency (in the case of progress checks each trimester). Software incorporating similar Tangerine:Class functions exist.[16] However, they are designed for high-income countries with significant IT infrastructure in place, are proprietary in nature, and can cost several tens of thousands of dollars per school. More significantly, to our knowledge, there is no existing tool that has explicitly been developed for localization into hundreds of languages and device compatibility (thus maximizing use of existing hardware) in mind. Tangerine:Class, in addition to being built using cutting-edge open source technologies, has been designed specifically for low-resource, low-capacity and multilingual educational environments. The aim is to spur broader adoption of effective and efficient classroom-based continuous assessments and use of resulting data to inform classroom action, improve practice and, ultimately, student reading outcomes.

The use of Tangerine:Class demonstrates the *mastery* component of our expanded framework of m-learning. It combines the intelligent power of mobile devices with their accessibility to make assessment a practice that teachers can carry out in their classrooms, on a regular basis. The software thus takes on the time-consuming and

[16] See, e.g., Wireless Generation: mCLASS: Reading3D; Scholastic: Reading/Phonics Inventory; Pearson: AimsWeb; McGrawHill: Yearly Progress Program

error-prone work of analyzing results and translating them into actionable recommendations.

- **Frontline SMS-enabled virtual coach**

Further recognizing how difficult teacher change can be and how critical ongoing support and follow-up are in the teacher professional development process (Guskey, 2002), the project is also implementing a 'virtual coach' using SMS to communicate regularly with teachers and instructional coaches to remind them of key implementation strategies, provide motivational messages, and allow them to communicate questions and concerns to their team. This supports the microlearning/microcoaching component of the m-learning content framework above by bringing instructional content and coaching to teachers when they need it the most—during implementation of new teaching strategies.

Initial findings

Tangerine

As a critical pre-cursor to development of teacher-focused tools, the core Tangerine software used for large-scale national administration of oral reading assessments was piloted in January 2012 within the PRIMR program. This field trial was intended for a first-level analysis of hardware and software performance, usability, and the overall feasibility of the approach based on actual conditions of administration. It involved a small sample in an urban area of Kenya consisting of 200 children in 10 schools, each completing three assessments (English EGRA, Kiswahili EGRA, EGMA), for a total of 600 assessments and more than 176,000 individual data points captured. Six enumerators visited schools in two teams of three enumerators each—one school per day, testing 10 students from first grade and 10 from second grade. Similar trials were conducted in May in Liberia and Malawi using revised versions of the software which were improved based on the Kenya experience.
The key research questions that the field trial aimed to answer were focused on the following:

- Functionality of hardware[17] and software: Does the electronic approach allow for complete and accurate recording of student responses? Does the electronic approach offer a secure method of backing up and transferring data for analysis? Is the hardware appropriate for typical assessment conditions?

- Usability: Have we achieved a *user-centered design,* from the perspective of typical end users, for Tangerine? Does the user interface of the selected hardware model create any barrier to use? Looks at usability categories of: learnability, efficiency, accuracy (error-rate), memorabilty and satisfaction.

[17] For this field trial, we chose the Amazon Kindle Fire. Designed as an eReader with multimedia capability, it has a web browser and the possibility to add third-party Android applications in addition to reading e-Books or other digital documents (i.e., pdf or Word documents).

- Comparison of electronic vs. paper assessments: To what extent is electronic administration as reliable as the paper administration? What other added value can be achieved through the use of the electronic mode?

The test found that the Tangerine software performed as it had been designed to and was effective in preventing many common administration errors (such as missing fields). The hardware also proved to be suitable for the purpose, with long battery life and a durable, ergonomic format. Assessors found both the hardware and software interfaces easy to learn and use, and a significant improvement over paper-based administration[18].

Teacher tablets and Tangerine:Class

The successful field trial of Tangerine as a data-collection tool, led to the next step of improving the data output and creating an interface optimized for teacher administration in the classroom. This involved customizing the interface for smaller devices, ideally Android smartphones; customizing the content to include more frequent, but specific mastery checks based on the local curriculum[19]; and preparing output in the form of charts, graphs and basic, actionable recommendations. At the same time, development began to adapt the existing PRIMR teachers guides, consisting of one 30-minute reading lesson per day for an entire school year, into digital format. The format will be a multimedia .pdf that is packaged as a stand-alone .apk (Android installation package) and loaded onto the teacher tablets.

During a two-week period in September 2012, prototypes of both Tangerine:Class and the digital teachers guide were brought to Kenya and presented to dozens of coaches and teachers during individual meetings and focus groups. The objective was to determine general attitudes towards and ability to operate the hardware and software, rather than in-depth debugging or beta testing. During this period, coaches provided feedback on some of the aspects of teaching reading that teachers struggle with and helped RTI specialists identify the types of multimedia inputs (described above) that can potentially respond to some of these challenges. Teachers in PRIMR-supported schools have also viewed initial designs of the products, have explored the tablet and software, and have provided feedback on usability and features to include. Further, more in-depth usability testing will be done once a full, working prototype has been completed and prior to rolling out the tablets during teacher training in January. RTI has initially selected the Nexus7 tablet based on internal testing for use as a data collection tool for large-scale EGRA assessments using the Tangerine data collection software. The Nexus has the best quality to cost ratio based on durability, capacity and battery life for under $200.

Although this was a rapid assessment exercise, it was sufficient to note extremely positive attitudes towards the technologies that are being proposed. Many teachers

[18] For full details of the field trial and more about Tangerine in general, please see www.tangerinecentral.org

[19] For example, teachers may check mastery of the following: knowledge of letter sound and name of "b", "e", "c", "f", and "r" as well as the reading of high frequency words "to", "has", "is", and "you" if this is what they were teaching that week.

were seeing a tablet computer for the first time, yet they were able to intuitively navigate the screen and features (such as scrolling, 'turning the page', clicking buttons, etc.) with little to no orientation or oversight. They also confirmed that the features being proposed, such as audio and images, would help them in their teaching.

A key part of the testing was to determine whether the output designed for Tangerine:Class mastery checks is appropriate and provides the type of information that teachers need in order to make data-informed instructional decisions and ultimately improve practice. Most teachers said that they do recognize and understand how to read basic line graphs and understand that a line slanting up is good progress, and a line slanting down is poor progress. However, without more time to provide them orientation on what the graphs are actually measuring, it is difficult to know with certainty whether they will be able to use those graphs or not. More helpful was the explicit suggestions and student rankings provided in a tabular output showing which children are doing well, and which students have results that should be of concern to the teacher.

As Gursky (2002) reminds us, "Professional development is a process, not an event." The field trial period helped us understand that much training and ongoing support needs to be done to help teachers understand the content of what we are proposing, prior to understanding how to use the technology. They will also need more time to understand how the technology is expected to help them teach better, and what their own responsibility is in being proactive and taking risks in using the software to improve their own teaching.

Moving forward

Implementation of the project will begin in January 2013, with teacher training and distribution of tablets to teachers. The experimental trial will take place over the 2013 school year and refresher trainings will be held prior to each term to review the experience and introduce the content for the next term. Additionally, instructional coaches will be making school visits to advise on both content and use of the technology. We hope that between now and January we will be able to improve the development of the tools and the implementation process through lessons learned during events such as the annual MLEARN conference and similar networks of professionals working in m-learning. We look forward to updating and sharing more concrete findings towards the end of 2013.

References

Abadzi, H. (2010). Can Teacher Training in Low-Income Countries Become More Effective? Innovative Insights from Observational Learning Research (Unpublished Draft). World Bank.

Atwell, J. (2005). *Mobile Technologies and Learning: A technology update and m-learning project summary.* London: Learning Skills and Development Agency. http://www.m-learning.org/docs/The%20m-learning%20project%20-%20technology%20update%20and%20project%20summary.pdf [Accessed 9-30-2012]

Burns, M. (2011). Modes, Models and Methods of Distance Education for Teacher Training: A Global Perspective. Washington, D.C.: Education Development Center.

Brookings Institution. (2012). Data analytics and web dashboards in the classroom. [Transcript of live seminar held in Washington, D.C. on 9-4-2012]

Carrier, C. (2011). Alternative Technology Pilot for ODL—Using an MP3 Player for Numeracy Training. Short-Term Technical Assistance Report by Seward Inc. Submitted to USAID Malawi Teacher Professional Development Project (Creative Associates International/RTI International).

Crouch, L. (2011). Cited in Strigel 2011.

Davidson, M. (2011). Improving literacy for the early grades through video-enhanced methods of teacher professional development: The case of Liberia. Presentation prepared for the Annual Conference of the Comparative and International Education Society, Montreal. RTI International.

Dowrick, P. (2011). Using Video Feedforward Strategies in Training: Liberian Teachers of Early Reading and Math Project. Unpublished trip report submitted to RTI International, 28 April 2011.

Dowrick, P. W., Kim-Rupnow, W. S., & Power, T. J. (2006). Video feedforward for reading. *Journal of Special Education, 39,* 194-207.

Dede, C. (2011). *Mobile learning for the 21st Century: Insights from the 2010 Wireless EdTech conference.*http://wirelessedtech.com/wp-content/uploads/2011/03/ed_tech_pages.pdf [Accessed 9-30-2012]

Futurelab, 2004

Fuchs, L., Fuchs, D., Hamlett, C. (1989). Effects of Instrumental Use of Curriculum Based Measurement to Enhance Instructional Programs. *Remedial and Special Education (RASE).* 10(2):43-52.

Fuchs, L., Deno, S., Mirkin, P. (1984). The Effects of Frequent Curriculum-Based Measurement and Evaluation on Pedagogy, Student Achievement and Student Awareness of Learning. *American Educational Research Journal,* 21(2):449-460

Naismith, L., Lonsdale, P., Vavoula, G., and Sharples, M. (2004). Mobile Technologies and Learning Report. Futurelab Series, Report 11.

Gove, A. and P. Cvelich. 2011. Early Grade Reading: Igniting Education for All. A report by the Early Grade Learning Community of Practice. Research Triangle Park, NC. P.12.

Guskey, T. (2002). Professional development and teacher change. *Teachers and Teaching: theory and practice.* 8(3/4).

Habitzel, K., T.D. Märk, B. Stehno, and S. Prock. (2006). *Microlearning: Emerging Concepts, Practices and Technologies After E-Learning*. Proceedings of Microlearning 2005 Learning & Working in New Media. Cited in Fozdar, Bharat Inder and Lalita Kumar.

2007. Mobile Learning and Student Retention. *The International Review of Research in Open and Distance Learning.* Vol. 8. Issue 2. Alberta. Available: http://www.irrodl.org/index.php/ irrodl/article/view/345/916.

Joint Information Systems Committee, (JISC) InfoNet. (2012). Newcastle upon Tyne: Northumbria University. *Mobile learning infoKit.* https://files.pbworks.com/download/3FnWActWsx/mobilelearninginfokit/50760424/mobile-learning-infokit.pdf [Accessed 9-30-2012]

Lucas, S. (2002). *Mobile libraries: Where the schools are going to the students*. Techknowlogia [online journal]. July 2002. Available at http://www.techknowlogia.org/TKL_Articles/PDF/418.pdf.

National Institute of Child Health and Human Development. (2000). Report of the National Reading Panel. Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction: Reports of the subgroups (NIH Publication No. 00-4754).

Piper, B. 2010. *Kenya Early Grade Reading Assessment Findings Snapshot*. Report developed for the William and Flora Hewlett Foundation. P.6. Korda, M., Piper, B. (2011) *EGRA Plus: Liberia. Program Evaluation Report*. Prepared for USAID/Liberia.

Pouezevara, S. & Khan, R. (2007). Learning Communities enabled by Mobile Technology: A Case Study of School-based, In-service Secondary Teacher Training in Rural Bangladesh. Bangladesh Country Report. ADB TA6278-REG. Research Triangle Park, NC: RTI International.

Seymour, P.H.K., Aro, M., & Erskine, J.M. (2003). *Foundation literacy acquisition in European orthographies.* British Journal of Psychology, 94, 143-174.

Strigel, C. (2011). *ICT and the Early Grade Reading Assessment: From Testing to Teaching*. Lead article – Educational Technology Debate. InfoDev/WorldBank & UNESCO: http://www.edutechdebate.org

Sprenger-Charolles, L., Colé, P., Serniclaes, W. (2006). *Reading acquisition and developmental dyslexia*. New York: Psychology Press.

UNESCO. (2005). Mobile learning for expanding educational opportunities: Workshop Report. Bangkok.

UNESCO. (2012). Mobile learning for teachers: Global themes. Paris: UNESCO.

Viteli, J. (2000). *Finnish Future: From eLearning to m-learning.* Published online as part of the ASCILITE 2000 conference proceedings. http://www.ascilite.org.au/conferences/coffs00/papers/jarmo_viteli.pdf [Accessed 9-30-2012]. The term was taken up later by Keegan, Desmond. 2002. *The Future of Learning: From eLearning to m-learning.* Zentrales Institut fur Fernstudienforschung, FernUniversität Hagen. Hagen.

USAID (2011). Request for Applications (RFA) No. SOL-OAA-12-000010. All Children Reading Competition.

Wagner, D. (2011). Smaller, quicker, cheaper. Improving learning assessments for developing countries. Paris: UNESCO IIEP.

Wagner, E. (2005). Enabling Mobile Learning. *EDUCAUSE Review*, vol. 40, no. 3 (May/June 2005): 40–53. http://www.educause.edu/ero/article/enabling-mobile-learning [Accessed 14 October 2012]

Wikipedia, *Microlearning.* http://en.wikipedia.org/wiki/Microlearning [Accessed 12 September 2012]

RETHINKING WHAT'S POSSIBLE - WORRYING ABOUT WHAT'S LIKELY

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Abstract

This chapter does not give specific examples of mobile devices delivering learning in *development* contexts; what it does instead is question the ways in which researchers and policymakers think about such examples. This is important because learning with mobiles in *development* is moving from projects, communities and researchers to agencies, corporations and policymakers; there has been an increase and a shift in interest in using mobiles to deliver learning in *development* amongst the wider world of agencies, corporates and ministries. This will not be ethically, culturally or pedagogically benign or straightforward. Perhaps it never was but it used to be smaller!

Part One: The Time is Right

Agency Interest

It is important to explore the place of mobiles to support and deliver learning in *development* now because there has been a discernible increase in interest amongst the wider world of agencies, corporates and ministries, and a discernible shift in interest outside Western Europe, and this introduces new dimensions. To trace a time line, in October 2010, the *UNESCO chair in e-learning* in Barcelona sponsored an international seminar that focused on *mobiles, learning and development*. At about the same time, the Development Fund of the GSMA, now subsumed into the GSMA Mobiles for Development programme, the trade association for the MNOs (mobile network operators) globally, published *mLearning: A Platform for Educational Opportunities at the Base of the Pyramid* (GSMA 2010) intended to give the MNOs a sense of the possible business opportunity. In February 2011, the massive *World Mobile Congress* in Barcelona sponsored its first awards - now entering their third year - for learning and attracted an impressive field from organisations working in *development.* In August 2011, USAID convened the first *m4Ed4Dev* symposium in Washington DC as a prelude to launching the *mEducation Alliance* in early 2012. In November 2011, one of the WISE debates in Qatar focused on *mobiles, education and the hard-to-reach*. In December 2011, UNESCO in Paris convened its *First Mobile Learning Week*, consisting of both closed sessions of experts and open sessions for the wider community. These sessions focussed, regionally and globally, on policy issues and teacher development, the latter often seen as a crucial place to break into the educational cycle and promote *education for all* (EFA). In March of 2012 there was a further *International Symposium* in Washington organised by UNESCO, hosted by CoSN, the Consortium for School Networking, and drawing together major

practitioners and stakeholders, and graced by the presence of Sir Bob Geldof. The next *mEducation Alliance Symposium*, in September 2012, entitled *Partnering For Scale And Impact,* illustrated the growing emphasis and direction of both corporate and agency priorities. The second UNESCO event, another *Symposium,* included in its *Mobile Learning Week,* in Paris in February of 2013, continued to align with wider objectives within the development community, shared with USAID, and focused on three particular EFA goals as they relate to mobile learning, namely:

- Improving levels of adult and youth literacy: how mobile technologies can support literacy development and increase reading opportunities
- Improving the quality of education: how mobile technologies can support teachers and their professional development
- Achieving gender parity and equality in education: how mobile technologies can support equal access to and achievement in basic education of good quality for all, in particular for women and girls.

Significantly, the *Symposium* sought contributions on Mobiles for Literacy, Mobiles for Quality of Education and Mobiles for Gender Equality. The UNESCO initiative, supported by Nokia, now has several components, namely, Policy Research and Advocacy, Teacher Support and Development and Mobile Learning Technology Concept Development and has started to convene panels and publish on all these three components. Other UNESCO activities have for example included workshops on *Developing Literacy through Mobile Phones - Empowering Women and Girls*.

There have also significant reports to the World Bank, *eTransform Africa Final Report*, and to the World Economic Forum, *Accelerating the Adoption of mLearning: A Call for Collective and Collaborative Action*, along with another one from GSMA, their *Transforming learning through mEducation* produced by McKinsey & Company, in Mumbai, and the *eLearning Africa 2012 Report*, where mobiles surfaced as the obvious delivery mechanism across the continent. Another trend has been agencies trying to understand the issues of mobiles and learning by commissioning specific regional surveys; GSMA recently undertook user surveys in Ghana, India, Morocco and Uganda whilst UNESCO has chosen Mexico, Pakistan, Nigeria and Senegal. Nokia also sponsored, with UNESCO, a crowd-sourcing challenge, promoting mobile technical innovation to bring about different aspects of education for all and social justice. UNESCO is likely to take their policy guidelines to a similar handful of countries.

Increasingly the conception of learning with mobiles will be influenced by these organisations and agencies, by their conceptions and their priorities. UNESCO for example say, “Mobile learning, or "m-learning", offers modern ways to support learning process through mobile devices, such as handheld and tablet computers, MP3 players, smartphones and mobile phones.” whilst the USAID position is, “the identification and applications of mobile technologies that can be effectively leveraged to address pressing educational issues including: literacy, appropriate educational content development and dissemination, system strengthening (such as education data for decision making), accessibility for learners with disabilities, professional development for educators, and workforce development.” These

definitions are somewhat at odds with the current ideas of the mobile learning research communities, mentioned later, that have moved away from such techno-centric definitions towards conceptions of mobile learning that focus on the mobility of the learner, on the capacity of learners to cross contexts, and on conceptions of learning aligned to mobile societies (Traxler 2008).

There is however also a further tension within the agencies' positions. In their policy and publications, they maintain an un-resolved tension between the conception of mobiles as the instruments of reform and improvement, as technologies for ministries, educators, schools and colleges to enhance the management, content and delivery of their (existing) curriculum, and the conception of mobiles as the instruments of dramatic social, economic and political change, of some educational Arab Springs that sweeps away those same ministries, institutions and officials of education rather than reforming and improving them. To put it another way, there is a notion in many parts of the world that the (formal) education system is *broken,* that this is part of a *crisis,* which we refer to later, and no longer aligned to or adequate for the various different societies that we live in. The ubiquity of mobiles and how they change our relationships to learning, knowing and understanding; to community, relationships and identity; to ethics, norms and expectations; to employment, economies and economics; to creativity and expression is only part of that (Traxler 2010a). This contrasts with a notion that learning with mobiles is essentially just the latest opportunity for institutional e-learning and can thus be co-opted into existing educational systems. These arguments are characteristic of a technology that inhabits the *bottom-of-the-pyramid* and the *development* context in ways that would never be true of other ICTs such as TVs and PCs.

American and Corporate Interest

Meanwhile, the past two or three years have seen much greater interest and activity around learning with mobiles in North America, especially in the USA, and this is gradually shifting the intellectual and commercial centre of gravity away from its roots in Western Europe, particularly the UK, and in South Africa. It is also changing the nature of what is understood to be the most effective pedagogies for mobiles. Historically, the Western European interest (Kukulska-Hulme *et al* 2011) has been on informal and contextual learning underpinned by a substantial engagement with theory, for example Actor Network Theory (Bell 2010), Conversational Theory (Laurillard, 2002, 2007), Activity Theory (Uden 2007, Wali *et al* 2008) or socio-technical systems ideas generally, inherited often from the earlier theorising of e-learning. Sadly, these have never engaged very convincingly with theories of development, for example, the Capability Approach (Kleine 2009). These foundations of mobile learning have been encapsulated in the *mLearn*, IADIS and WMUTE conference series, the *International Association for Mobile Learning* and the *International Journal of Mobile and Blended Learning*. *mLearn* started in 2002, the others shortly after. Now, corporate training, the connected classroom, *edutainment* and drill-and-test packages are an increasing part of the picture; these too represent changes in the conception of mobile learning. These changes had been predicted and accelerated by successive recent Horizon Reports and are illustrated by looking at the contributions to the annual *mLearnCon* conference, started in 2010, and by the

growth of *SIGML: Mobile Learning Special Interest Group*, started about the same time within *ISTE* (the US International Society for Technology in Education). As well as their educational significance, they point to growing confidence in viable business models for at least some aspects of learning with mobiles. One particular spin, echoing earlier discussion in the UK and in Africa but not reflected in the research literature, is the notion of *bring-your-own-device* as a strategy combining choice with sustainability, though not without problems in terms of infrastructure, equity and quality (UNESCO 2011; CoSN 2011, Traxler 2010b)

Another consequence of the growing US involvement in learning with mobiles and the rise of the so-called *apps economy* is that learning with mobiles is now assumed to longer need research or researchers to work with practitioners and policy makers. "*Education? - there's an app for it",* people now say, everyone understands it; culture and pedagogy no longer seem to be components or obstacles. In the wider practitioner and policy communities of the developed world, everyone owns and understands a powerful mobile and its affordances, for learning and anything else are clearly just *common-sense*, no longer requiring specialist research input. Everyone, including those outside formal education organisations, has a theory of education and learning with mobiles, perhaps several, perhaps not ones that are proven or particularly complex or rational, perhaps only something like *content is king* or *it takes a village a child to raise a child* (Rodham Clinton 1996, but controversially elsewhere too) or *Africa is a oral culture* and so the role for the research community is in practice increasingly marginal. This is an important issue because as we use mobiles to take learning to communities and cultures unlike any of our own, we will encounter their local theories of learning, theories embedded in their traditions and their culture. These express their ideas about what to learn, where, when, why and how to learn, who learn from; the nature of their educational heritage and identity. The more diverse our global ecology of learning and its theories the richer the opportunities we offer to other cultures and communities.

There is however a considerable concern that whilst these new players are attracted to supporting learning with mobiles, that their priorities and values differ from those of the older players and that understandably scale, sustainability and impact now feature much more obviously. In this new ecology of learning with mobiles, these factors mean that some forms of mobile learning will now thrive whilst others will perish. This account may hint at which ones these are likely to be.

Two rather different developments have been MobiMOOC, a massive online open course devoted to mobile learning, run for the second time in September 2012 and attracting in excess of 600 participants each iteration (de Waard *et al* 2012), and the drafting of mobile learning curriculum framework intended to facilitate the adoption within teacher training institutions (Botha *et al* 2012).

The Impact of Impact

That scale, sustainability and impact feature strongly in the new agenda means that agencies and corporations are hoping to learn something about from the previous ten years of activity and experimentation that will inform their activities for the next

ten years. This perhaps overstates the changed environment; the past is not yet over and the future began some while ago and the present is a phase of blurred transition. Nevertheless, the agencies and corporations are looking for something to build on.

Many of the ways in which we think about examples from the history of mobile learning, and many other kinds of small-scale educational and social interventions, are, however, deeply problematic and risk leading to false conclusions. There is, for example, a simplistic filter that says some interventions took place in developing countries and are relevant, others took place in developed countries and are not, sometimes excused or explained by a *trickle-down* model of diffusion. This risks overlooking the experiences and evidence using mobiles to address other aspects of educational disadvantage, disenfranchisement and exclusion in the developed world over ten or more years and privileges a specific perspective, a characteristically modernist form of analysis that we return to later.

Disadvantage, disenfranchisement and exclusion in the developed world; technology and education in the developed world generally; the political environment that embraces them….. these are all subject to specific discourses and disciplines, to specific arguments and analyses that seem different from those used in the developing worlds. Can these be broadened and connected? Can we look at learning with mobiles through the same intellectual lenses and with the same methods, theories and values irrespective of location or context, not letting conceptions about *developed* vs *developing* prejudice how we think and act, or the dichotomy of *mature* and *emergent* economies or *East* and *West*. We return later briefly to this as symptomatic of a modernist world-view. There are however more systemic technical problems.

Funding and Reporting

In reviewing the recent UNESCO outputs and other global secondary sources, several things are apparent. The reported activities of the mobile learning community do not often include examples from the commercial and corporate world, from corporate social responsibility projects or agency-funded programmes, certainly seldom in the peer-reviewed research literature; they do not often include examples from the work of consultants, for whom publication was not a priority, an expectation, a duty or a right. The reported accounts do not include anything Russian, Arabic or Chinese, nor much in French, do not include literature from Central Asia or Latin America, and North American contributions are infrequent until recently. Accounts of failures are massively out-numbered by accounts of successes and accounts of learning with mobiles are easiest to find if they define themselves as *mobile learning*. In looking at this skewed body of evidence, examples and experiences, researchers and policymakers can necessarily only arrive at skewed understandings.

We should look at how these various reported examples came to be funded in the first place. They could only happen if and for as long as they were funded. This funding support generally came from departments, donors and agencies with a development or capacity building or humanitarian agenda. Rightly or wrongly, these

departments, donors and agencies provided funding opportunities for mobile learning researchers to demonstrate that their work could make a development impact, broadly defined or narrowly defined. In any review of the capacity of mobile devices to address social or educational disadvantage, we cannot ignore the extent to which the visions, values, performance indicators and preferences of the funding departments, donors and agencies have skewed the outcomes and impact of the work so far and the lessons we learn. There is therefore the likelihood that funding perpetuates funding, that the process is self-referential and circular, that what we are likely to see is what has been cynically characterized as a version of *policy-based evidence formulation* – as opposed to the *evidence-based evidence formulation* of rational, accountable and transparent practices espoused by modernist governments around the world.

Evidence and Evaluation

A major component in the cycle of policy and research is evidence and this comes from evaluation activities, sometimes called M&E, monitoring and evaluation. Evaluation of education, and certainly of mobile learning, should however be recognised as notoriously difficult to evaluate. Just because it is possible to measure changes in attributes or behaviour does not mean these are educationally meaningful or remotely life-changing. In the case of learning with mobiles, learning as part of moving around the real world, it is difficult to observe, difficult to measure and difficult to explain meaningful educational change (in terms of the myriad causes and effects in people's real world lives), much more so than any sedentary e-learning. In general, evaluation has proven to be imperfect (Traxler & Kukulska-Hulme 2005). In practical terms, working with leading edge mobile technology can mean that technical problems push evaluation off the end of the schedule or off the end of the budget. Mobile technology and its appropriation by users grow so rapidly and so unpredictably that a structured, thorough and comprehensive evaluation might provide a rigorous account of an environment that now no longer exists. The difficulties with deploying adequate and appropriate expertise within the confines of individual short-term technically innovative or theory-driven research project, and of individual research projects having sufficient coherence in terms of its ethos, methods and planning to make this possible, are situated however, at the centre of wider contextual concerns. As we have said, the ways that projects are funded, organised and reported are all problematic but actually our biggest challenges are not rigour and trustworthiness within individual projects but the inference, abstraction and reasoning above, outside and across projects, that happens in order that policy makers can obtain some big picture.

Generalising and Transferring

These are complex. We try, for example, to engage with policy makers with briefings and case studies that build on individual research project evidence and conclusions. When we look back at these, several things are apparent (Traxler & Wishart 2011, Traxler & Belshaw, 2011). Firstly, that they often round up predictable experts from within the community, people known to be good (English) speakers or writers describing successful projects in an accessible fashion with good graphics. Secondly, failure often goes unreported, unpublished, and unacknowledged (except at the small but growing number of events round the world that celebrate failure as a mark

of innovation and confidence), and the impression is that careers and reputations are not built on failures however interesting or thought provoking. Thirdly, many projects are destined to be successful and are reported accordingly. Funders, agencies, ministries, officials, researchers and others will have all invested much prestige and resource giving projects the necessary momentum and visibility, and failure becomes unthinkable and inconceivable. The staff at high-profile successes can become unwittingly very well rehearsed and media-savvy in their accounts and explanations of success, and pre-occupied with fund-raising, losing sight of the practicalities and day-to-day issues. Furthermore, mobile learning is plagued by unflattering comparisons with apparent successes in cognate fields, for example the *hole-in-the-wall*, *mPESA* or the *Grameen Bank*. Can we expect safe inferences and understanding to grow out of these examples?

Analysis within projects can be skewed too by the history and assumptions brought to them. If you are a technologist or a teacher, everything, the problems and the solutions, looks like technology or teaching. This mind-set not only constrains the downstream as we analyse data and present evidence but the upstream as we isolate and eliminate confounding variables and site our interventions across the remaining problem-space to generate the appearance of generality.

These issues interact with the life cycle of projects from funding onwards. Funders, that is donors, agencies and ministries, make choices about the spread of projects, projects then may themselves make choices about siting of their interventions; later both projects and funders will make choices about how they sample and report their respective activities. They are all caught in a pay-off between depth and breadth. On the one hand, they can focus on one aspect, one dimension and seek data and outcomes that are as rigorous and trustworthy as possible but may lack transferability or wide relevance. On the other hand, they could try sites and samples spread across a range of dimensions or variables, spreading themselves thin in terms of the trustworthiness of their data and outcomes but hoping for wider relevance and greater generality.

These are some of the reasons why it is now timely to question the ways in which we think about earlier examples of learning with mobiles in *development*

To summarise, so far, we could ask,

- What do examples of small-scale successes tell us about large-scale programmes?
- How relevant, trustworthy and credible are the inferences and outcomes of earlier examples?
- How do earlier subsidized examples with provided devices inform future sustainable programmes with users' devices?
- How does funding and policy skew the choosing, siting, sampling, evaluation and reporting of examples?
- What is the impact of project evidence and outputs from earlier examples on corporate and government policy and resources?

The Underlying Challenges

As we have said, there are major flaws in how we report and reason about the experiences, the outcomes, the relationships and the environment around our work learning with mobiles in *development*. This happens at a number of levels for a number of reasons. It can be explained within what might be called a *common-sense* view of the world and remedied by technical and tactical fixes, by greater transparency, by greater resources and by greater rigour. Some are explained as the mysterious workings of *multi-causality* or excused as *unexpected consequences* or what might be called *unexplained causes* – how much fieldwork and monitoring from earlier examples has been skewed by senior officials reluctant to leave the capital, by junior officials maximising their *per diems* and by consultants maximising their *air-miles?*

A more comprehensive account puts these into a broader intellectual framework, the transition from *modernism* to something else. *Modernism* is the rational and objective worldview, embedded in the people, history and culture of Western Europe. It subsequently fragmented within academic philosophical circles and has then been problematised by various authors characterised as *postmodern*. It is however still the prevalent ideology in countries and institutions around the world that have been influenced by European ideas. Post-modernism's positions are complex and confused but one of them, for example, characterises our societies as moving into *liquid modernity* (Bauman, 2000) – apocryphally paraphrased as *permanent beta* – and not just the developed and Western societies of the global North.

Modernism might be characterised as the faith that history and humanity are going somewhere, somewhere good; that language and other symbols can describe reality (and that reality as an objective, shared, consistent and unambiguous source of all our experiences actually exists); that cause and effect are simple and stable and also that right and wrong are equally simple and stable; and that reason, science, technology and education are agents of benign change and improvement.

These are modernism's foundational *grand narratives* (Lyotard 1999). Other derivative ones might include Darwinian evolution, Marxist accounts of history, Freudian psychoanalysis, the *scientific method* as a mechanism for establishing truth and the ideal of the *nation-state* and its bureaucracies. *Development* is one of modernism's lesser grand (*sic*) narratives. It is one that is widely held and one that justifies European interventions and attitudes in other cultures, especially Africa, from the seventeenth century onwards. Post-modernism can only rigorously be defined as whatever comes after modernity. Mobility, specifically the mobility and connectedness afforded by mobile technology, changes or challenges so many aspects of different cultures, particularly the solidity of our knowledge, identities, cultures and institutions, as to take us beyond the certainties of modernism (Traxler 2008b). We should retrace our steps and ask if the issues we have outlined earlier are the various consequences of modernist misplaced expectations, the expectations that history can teach us something, that examples are examples of something.

It is of course a modernist position to hope that evidence is a credible basis for policy formulation; it is an act of faith since clearly there can be no evidence for evidence.

There is a related issue. The world is now increasingly characterised by challenges, disturbances and discontinuities that threaten the dominant, probably modernist, notions of stability, progress and growth. These are major challenges to research communities, including the development studies research community and the mobile learning research community, challenges to these communities to stay relevant, responsive, rigorous and useful.
In various public forums outside and across research communities, there is the notion there is an emergent *crisis*, manifest in, for example

- economic and resource crises, including long-term radical increases in economic inequality within nations; youth unemployment across Europe, the polarisation of employment and the decline in growth; sovereign debt defaults and banking failures; mineral and energy constraints;.
- environmental and demographic crises, in particular, the implications of declining land viability for migration patterns; refugee rights and military occupations; nation-state population growth and its implications for agriculture, infrastructure and transport
- crises of accountability, expressed in the failure of traditional representative democracy systems especially in the context of global markets, the growth of computerised share-dealing; the emergence of new private sector actors in public services; the growth of mass participatory movements, the rise of unelected extremist minorities both challenging the legitimacy of the nation-state and its institutions
- crises of socio-technical disruptions and instability, amplified by a reliance on non-human intelligence and large-scale systems of systems in finance, logistics and healthcare, and by the development of a data-rich culture; the increasing concentration and centralisation of internet discourse in the walled gardens of social networks; the proliferation and complexity of digital divides;
- the dehumanisation crisis, expressed in the replacement of human flourishing with consumption; the replacement of the idea of the person with the idea of the system, the replacement of human contact with mediated exchange; the commodification of the person, education and the arts

and specifically, in relation to learning and technology including learning with mobiles;

- the dependency of educational institutions on computer systems for research, teaching, study, and knowledge transfer; the industrialisation of education using computers; marginal communities and threat posed by the globalization and corporatisation of learning; the changing political economy of technology in education; learning driven by skills and employability in an increasingly turbulent future; the role and responsibility of research and of education as these crises unfold, the complicity or ambiguity of technology, including mobile technology, in education in the crises; the sustainability of current learning technology ecosystems, including ones based on mobile technology, their responsiveness and resilience, the extent to which the mobile learning

research communities question, support, stimulate, challenge and provoke their host education sectors?

Education and technology permeate all of the perspectives outlined above. Learning with mobiles in *development* is at the intersection of technology and learning and it, as we said earlier in describing modernism, encapsulates many of the ideals, problems and potential of both. It is possible however that they could ameliorate some of their consequences or amplify and exaggerate others. There is a possibility that in exploring the examples of the past, seeking some sort of narrow academic rigour, relevance and transferability, of merely *rearranging the deck chairs on the Titanic* or *fiddling while Rome burns.*

Learning with mobiles is based in communities nurtured within the institutions and organisations of formal education in the recent decades of relative stability and prosperity in the developed nations of Asia-Pacific, North America and Western Europe; learning with mobiles in *development* contexts has inherited of much of these sensibilities and aspirations. Some of the critical challenges and crises mentioned above directly relate to the perceived missions of mobile learning, its community and the examples that we might explore. The *transition* movement, the *open* movement, the *occupy* movement and the *Arab Spring* are all parts of wider responses to differing perceptions and perspectives of an underlying malaise, one that frames a discussion of exploring examples of mobiles for learning in development.

References

Bauman, Z. (2000) (2000) Liquid Modernity, Cambridge: Polity, 2000

Bell, F. (2010) Network theories for technology-enabled learning and social change: Connectivism and Actor Network theory, in L. Dirckinck-Holmfeld, V. Hodgson, C. Jones, M. de Laat, D. McConnell D & T. Ryberg (eds) Proceedings of the 7th International Conference on Networked Learning 2010

Botha, A., Batchelor, J., de Waard, I. & Traxler, .J (2012) Towards a Mobile Learning Curriculum Framework in Proceedings of IST-Africa, Dar-es-Salaam, Tanzania, May 2012

CoSN (2012) Making Progress: Rethinking State and School District Policies Concerning Mobile Technologies and Social Media, Washington: Consortium for School Networking

de Waard, I., Koutropoulos, A., Gallagher, M. S., Abajian, S.C., Hogue, R. J., Keskin, N. Ö., Rodriguez, O. (2012) Merging MOOC and mLearning for increased learner interactions, International Journal of Mobile and Blended Learning.

GSMA (2010) mLearning: A Platform for Educational Opportunities at the Base of the Pyramid, London: GSMA, online at http://www.gsmworld.com/documents/mLearning_Report_Final_Dec2010.pdf

Kleine, D. (2009) ICT4What? – Using the Choice Framework to Operationalize the Capability Approach to Development, Proceedings of ICTD2009, Doha, Qatar 108 – 117

Kukulska-Hulme, A., Sharples, M., Milrad, M., Arnedillo-Sánchez, I. and Vavoula, G. (2011). The genesis and development of mobile learning in Europe. In: Parsons, D. (ed) Combining E-Learning and M-Learning: New Applications of Blended Educational Resources. Hershey, PA: Information Science Reference (an imprint of IGI Global), pp. 151–177

Laurillard, D. (2002) Rethinking University Teaching - A Conversational Framework for the Effective Use of learning Technology, 2nd edition, Routledge, London.

Laurillard, D. (2007). Pedagogic forms of mobile learning: framing research questions. In N. Pachler. Mobile Learning - towards a research agenda. London, Institute of Education, University of London: 153 - 177.

Lyotard, J-F, (1999) La Condition postmoderne: Rapport sur le savoir (The Postmodern Condition: A Report on Knowledge) Minneapolis: University of Minnesota Press & Manchester: Manchester University Press (Transl. G. Bennington and B. Massumi from La Condition postmoderne: rapport sur le savoir. 1979, Paris)

Rodham Clinton, H. (1996) It Takes A Village, New York: Simon and Schuster

Traxler, J. & Kukulska-Hulme, A., (2005). Evaluating Mobile Learning: Reflections on Current Practice, Proceedings of MLEARN2005, Cape Town: MLEARN

Traxler, J. (2008a), Learning in a Mobile Age, International Journal of Mobile and Blended Learning, Vol. 1. No. 1, pp 1-12

Traxler, J. (2008b) Mobility, Modernity, Development in J. S. Pettersson (2009), Proceedings of 1st International Conference on M4D Mobile Communication for Development, Karlstadt: Karlstadt University Studies

Traxler, J. (2010a) Sustaining Mobile Learning and Its Institutions, International Journal of Mobile and Blended Learning, Vol.2, No.4 pp 58 - 65

Traxler, J. (2010b) Students and Mobile Devices, ALT-J, Association for Learning Technology Research Journal, 18(2): 149–160

Traxler, J. & Wishart, J. (2011) Making Mobile Learning Work: Case Studies of Practice, Bristol: ESCAlate (HEA Education Subject Centre)

Traxler, J. & Belshaw, D. (2011) Reading Case Studies, workshop at ALT-C 2011, Leeds, UK, online at http://altc2011.alt.ac.uk/talks/22274

Uden, L. (2007) Activity theory for designing mobile learning, International Journal Mobile Learning and Organisation, Vol. 1, No. 1, 2007

UNESCO (2011) Mobile Learning Week Report, Paris: UNESCO

Wali, E., Winters, N. and Oliver, M. (2008) 'Maintaining, changing and crossing contexts: an activity theoretic reinterpretation of mobile learning', ALT-J, Association for Learning Technology Research Journal, 16:1, 41 – 57

APPENDIX 5: WORKSHOP PRESENTATIONS

ACCESSIBLE AND AFFORDABLE EDUCATION WITH MOBILE TECHNOLOGY AND OPEN EDUCATION RESOURCES Dr Mohamed Ally, Athabasca University, Canada

Outline

- My projects related to mobile technology and open education resources (OER)
- OER
- Selected research studies
- Education for All and OER/mobile technology
- Conclusion

Projects related to Mobile Learning and/or OER

- Mobile learning to train the Qatar workforce on workplace English (Qatar Foundation: Qatar National Research Fund)
- Learners' use of mobile technology when taking courses at a distance (funded by the Social Sciences and Humanities and Research Council of Canada)
- Organization of American Sates
- State of mobile learning in Canada and future directions for mobile learning in Canada

Projects related to Mobile Learning and/or OER (cont'd)

- Delivering teacher training on mathematics using mobile technology (joint proposal submited: University of South Africa, Athabasca University and Open University of Tanzania)
- The effect of mobile technologies use on community health worker effectiveness and retention in Zambia
- Use of open education resources in Brazil

Projects related to Mobile Learning and/or OER (cont'd)

- ICT training delivered on mobile technology for ESL learners and workers (Athabasca University and Commonwealth of Learning)
- Use of ICT to access to legal services and information from rural areas of Canada
- Mature adults use of E-readers to access information

Open Education Resources (OER)

- "OER are teaching, learning and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use or re-purposing by others." (The William and Flora Hewlett Foundation)
- "Open educational resources include full courses, course materials, modules, textbooks, streaming videos, tests, software, and any other tools, materials or techniques used to support access to knowledge." (The William and Flora Hewlett Foundation)
- Open educational resources (OER) are learning materials that are available freely available for use, remixing and redistribution.

Benefits of OER

- Low cost to learners
- Social justice: Access by anyone
- Prevent duplication of effort

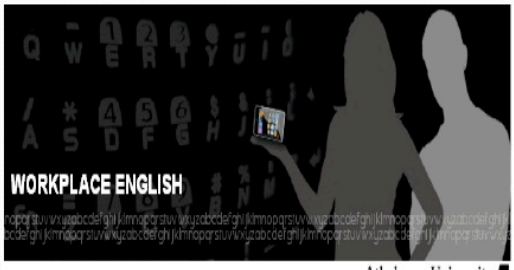
Issues to be addressed

- Most OER available in English
- Quality of OER
- Standards for development and review of OER
- OER should be accessed by different technologies

ESL Mobile Learning Project

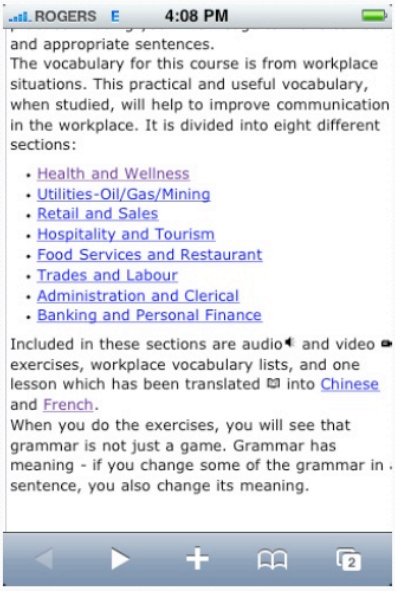
Mobile Workplace English Project

- Build on the success of Mobile ESL project
- Improve workplace communication
- Provide practical and useful vocabulary
- Introduce relevant situations

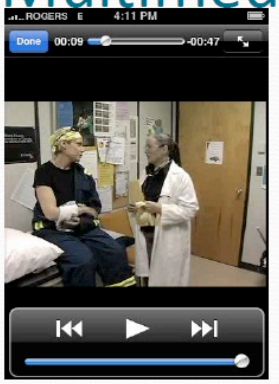


Athabasca University

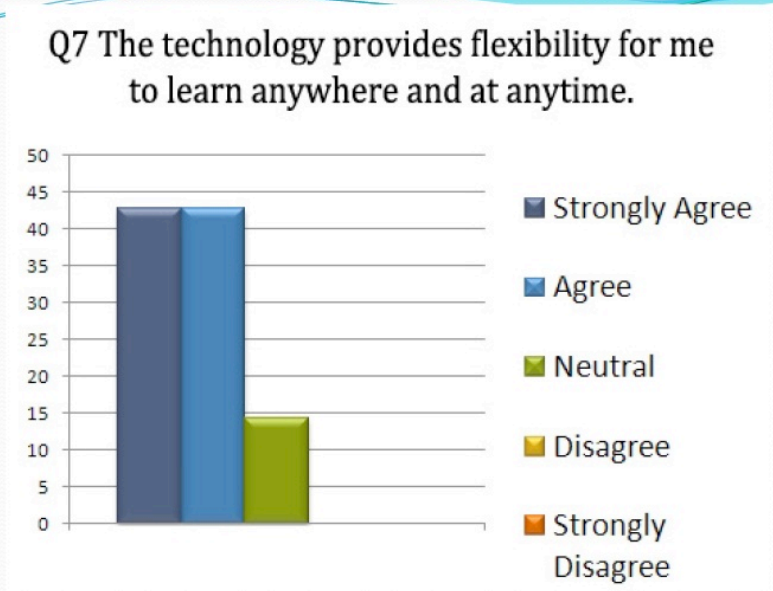
Mobile Learning Lessons in Different Sectors



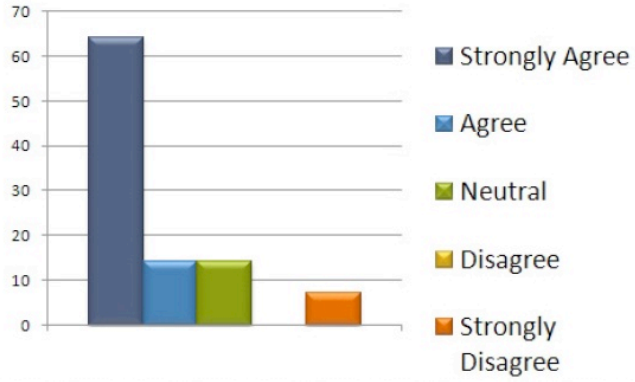
Multimedia Features -video



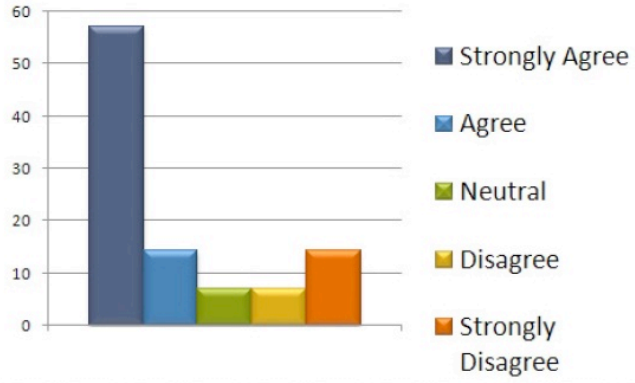
- Health and Wellness video followed by interactive questions



Q14 The use of this type of technology could make learning materials more easily available.



Q26 I would like to take other lessons using mobile technology.

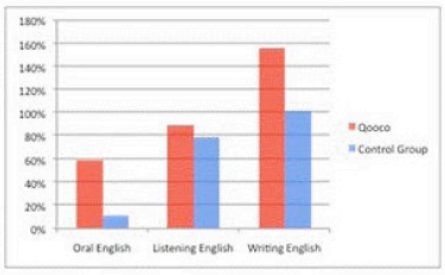


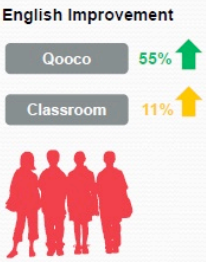
Spoken Language Training: The Opportunity to Change the Lives of Millions!

Qooco

SHANDONG CASE STUDY

- 8 Week case study with China MOE in Shandong Province
- Traditional classroom environment vs. mobile, online content
- Qooco students significantly outperformed their peers in all measured areas





iQUBE PILOT PROGRAM

- Launched September 2012 in Singapore and Cambodia with more countries to follow.
- One tablet for every child using Qooco English learning solution
- Enormous affordability – a catalyst for the tablet revolution.

Partnership with Samsung to improve millions of lives.

Mobile Learning in Canada

Recommendations for Canada

- A ***national agency should be established*** or an existing agency should be used to coordinated mobile learning activities across Canada so that mobile learning developers, researchers, and mobile device manufacturers can communicate with each other to share best practices and research results.
- ***Develop standards for mobile learning*** so that learning materials can be developed and shared between organizations.
- Include mobile learning as a stream in the ***Tri-council research grant programs***.
- Develop ***training programs*** specializing in mobile learning for delivery across Canada.

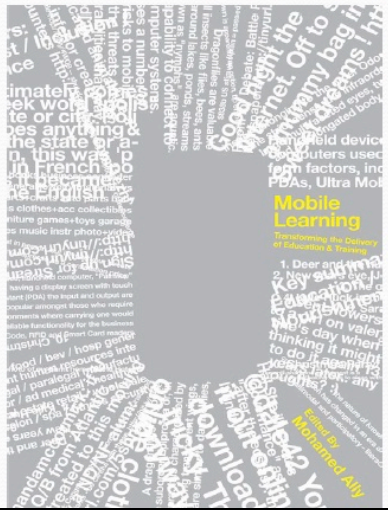
Recommendations for Organizations

- Integrate mobile learning in strategic, business, and educational ***plans***.
- ***Create partnerships*** between industries and educational institutions to collaborate on the mobile learning research and the development of learning materials.
- Develop a ***research agenda for mobile learning***.
- ***Publish research studies*** so that all Canadians can have access to the results of the studies.

www.aupress.ca

Open Access Book
Download Statistics

Ally, M. (2009). Mobile Learning: Transforming the Delivery of Education and Training
http://www.aupress.ca/index.php/books/120155



Mobile Learning Open Access Book Download Statistics

- Total number of free downloads over three years = 55,523
- Number of countries that downloaded the book over three years = 58
- Number of print copies sold over 630
- Free download (**http://www.aupress.ca/index.php/books/120155**)

Role of OER and mobile learning in development

UN Education for All Goals

- Ensure that by 2015 all children, particularly girls, those in difficult circumstances, and those belonging to ethnic minorities, have access to and complete, free, and compulsory primary education of good quality.
- Ensure that the learning needs of all young people and adults are met through equitable access to appropriate learning and life-skills programs.
- Achieve a 50 % improvement in adult literacy by 2015, especially for women, and equitable access to basic and continuing education for all adults.

UN Millennium Development Goals

- **Goal 1: Eradicate Extreme Hunger and Poverty**
- **Goal 2: Achieve Universal Primary Education**
- **Goal 3: Promote Gender Equality and Empower Women**
- **Goal 4: Reduce Child Mortality**
- **Goal 5: Improve Maternal Health**
- **Goal 6: Combat HIV/AIDS, Malaria and other diseases**
- **Goal 7: Ensure Environmental Sustainability**
- **Goal 8: Develop a Global Partnership for Development**

What is next?

- As educators and researchers we have to go one step further by implementing mobile learning using OER to make a difference in the world
- Our research should make a difference in peoples' lives

What should be done to transform education with OER and mobile technology?

- Change the education system
- Change the attitude of educators and senior executives
- Lobby for free connectivity globally
- Work with the hardware and software developers to build devices for education
- Change our attitude about learners' ability
- Educate all students, not just selected students
- Make learning resources available as OER

Allowing learners to access OER when needed using mobile technologies will empower learners to learn in context and be creative

Access to open education resources using mobile and ubiquitous technologies will revolutionize education and change the world

Thank you

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Researcher
Technology Enhanced Knowledge Research Institute (TEKRI)

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Canada

MOBILE FOR ENGLISH FOR DEVELOPMENT: CASE STUDIES FROM THE BRITISH COUNCIL

Neil Ballantyne, The British Council

BRITISH COUNCIL

Mobile for English for Development

Case studies from the British Council

Neil Ballantyne

Mobile Learning Manager

British Council purpose

We connect people from the UK with people from around the world through shared cultural interests. This creates lasting ties between them which cut across national and cultural divides. It builds awareness and understanding of the UK which contributes to the UK's long-term prosperity, security and standing worldwide. It benefits people in the countries where we work by offering them international opportunities and supporting development and stability. Through our work we share and learn from each other.

Annual Report 2011-2012

English Next – David Graddol

Key drivers for English

Access to education system – increasing demand for English-medium schools, widening access to higher education

Employability – many jobs in commercial sector now require good English skills

Social mobility – English is seen as an access route to the middle classes and social/geographical mobility

Mobile for English for Development

Many developing countries may be textbook poor, but they are mobile technology rich.

The developing world is increasing its share of mobile subscriptions. In 2005 people in the developing world represented 53% of all mobile subscriptions. At the end of 2010 they represented 73% of the world's mobile subscriptions

Poor people are indeed experts in how to leverage mobile technologies in their communities

Source

UNESCO Mobile Learning Week Report

http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/ED/ICT/pdf/UNESCO%20MLW%20report%20final%2019jan.pdf

Overview of some of the projects

SMS projects – from local to global

Repurposing smartphone projects and working with MoEs and large scale partners to deliver syllabus mapped content

Employability skills projects in India

Teacher and learner resources

Teacher training projects

SMS - overview

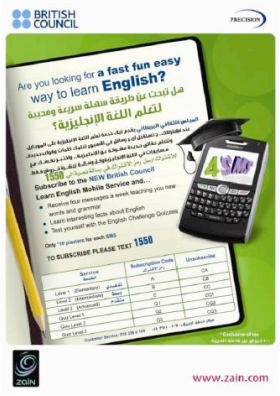
From 2008 in Thailand, Colombia, China, Kazakhstan, Malawi, Indonesia, Sudan and planning in Libya, Nepal, Cyprus and others.

First seen as “doable, attractive and monetisable”

Aims: Reach and opportunity

7.8 trillion SMS trillion messages were sent in 2011. SMS traffic is expected to reach 9.6 trillion in 2012 (Portio Research).

I love you like bees love honey. Aku mencintaimu seperti lebah mencintai madu. *www.britishcouncil.org/indonesia*



SMS – benefits

Scalability (initial consideration)

Cheap to start up

Reach – channel unmatched in certain countries

Simplicity – some research indications shows the basic content was preferred

Positive feedback

– “89% of users read learn English content every day” (China, Nokia Life with BC content).

Feedback from China

SMS – challenges

- Scalability – can re-use content but not partners
- Partnership challenges
- Monetisation challenges
- Promotion challenges
- M&E – who are the users? Where is the data? Who do we do it with?
- Suitability and development of content
- Technical challenges

Nokia Life Learning

Nokia Life (SMS as Bearer)

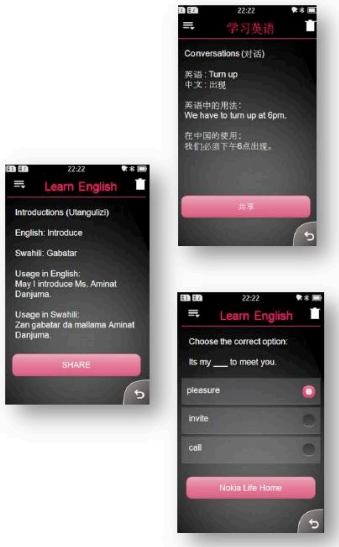
Nokia Life is the world's largest Life Improvement services suite offering services in *Education, Health, Agriculture and Infotainment* topics.

Presently available in *India, China, Indonesia and Nigeria*, Nokia Life has **over 76 million registered users**.

Designed so that the most basic of mobile phones can benefit, and with no need for any data consumption, Nokia Life provides a lifeline for people at a grassroots level when they might otherwise find it difficult to access the Internet, or find other sources of education and information.

Content from British Council helps Nokia Life users in China embark on their journey to learn English.

British Council is also collaborating with Nokia Life in expansion to more countries.



Repurposing smartphone and web content

From Samsung tablets > corporate partnerships > Google Play > Thai primary classrooms

From web > syllabus mapping exercise > Intel Classmate and beyond

Jobseekers

- 1st attempt via 3G

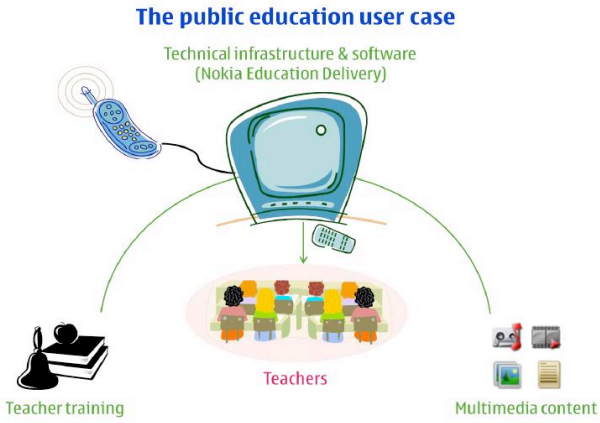
- 2nd attempt via the web

- 3rd attempt via Google Play

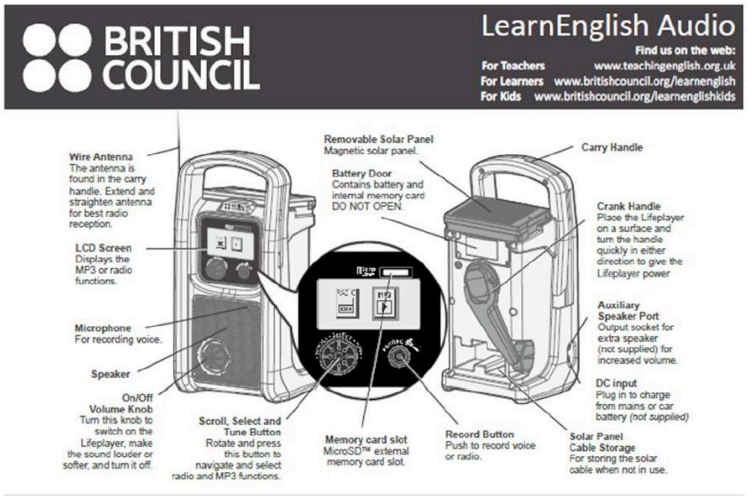
Nokia Education Delivery

Re-using mapping exercise

Starting Q4 2012



Lifeplayer



TALULAR

Reaching, and then staying in touch, with remote regions (Papua).

Sustainable teacher training project.

Delays in getting project off ground

Monitoring and evaluation framework

Who we work with	What they experience	What they take away	What they do	Lasting impact
English Language (EL) policy makers and UK institutions	Policy dialogue events, publications, research, consultancy, accreditation of institutions	Improved ability to implement successful English language policy reform. UK stakeholders are aware of opportunities overseas	Introduce language policies to increase teacher capacity, and support effective teaching and learning. Link up with UK providers	English is firmly established in educational policy that supports a country's development. The UK's reputation is enhanced - as a source of expertise in EL and as a partner for language policy and reform
Teachers of English, lecturers and teacher trainers	Teaching resources, training courses, development programmes, networks, professional development frameworks	Improved English proficiency and enhanced classroom skills and confidence, improved digital and social media skills	Teach more effectively and confidently. Engage with colleagues and share experience and ideas. Join networks and meet colleagues overseas	Teaching capability increases. Language teaching professionals regard the UK as a world authority that supports training opportunities, teaching resource development and professional development
Learners of English and exams candidates	English courses, exams, websites, mobile applications, broadcast and social media content, virtual learning environments	Improved English and social media skills and confidence, improved impressions of the quality of UK material	Use English to improve employment and education prospects, participate in social media networks and engage with online communities	In-country English capability increases. Language learners have a positive view of English and the UK is seen as a provider of high-quality educational opportunities. English is used to engage with global audiences

More widespread and better quality teaching and learning of English worldwide

What we are doing now?

More work going into content to link into a global syllabus of themes and exponents based around CEFR, EAQUALS etc

Better understanding of goals – moving from 'reaching every learner and teacher' to focus on quality.

Better understanding of monitoring and evaluation

Working with global partners – Nokia, Microsoft, Intel, OU etc

Increasing capacity

Contact

Neil Ballantyne

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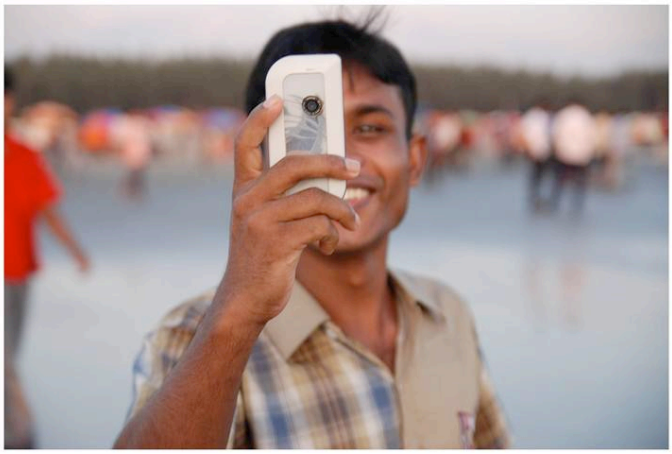
BBC JANALA MOBILE SERVICE: A RESPONSE TO CONTEXT AND USER EXPERIEINCE

Tanya Cotter & Tanim Ashraf, BBC Media Action, Bangladesh

BBC Janala

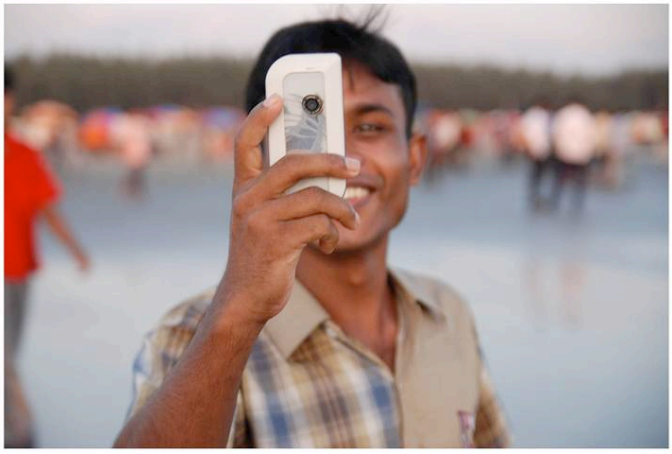
A multiplatform approach



BBC MEDIA ACTION
TRANSFORMING LIVES THROUGH MEDIA AROUND THE WORLD

BBC Janala Mobile

A response to context and the user experience



BBC MEDIA ACTION
TRANSFORMING LIVES THROUGH MEDIA AROUND THE WORLD

Key mobile milestones 2008/9

- Formative research
- BTRC approval and mobile operators' agreement
- Design of brand
- Design of communications campaign
- Design and development of service
- Design and development of content
- Launch of:
  - BBC Buzz television show
  - BBC Janala website
  - BBC Janala Mobile

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Key mobile milestones 2010/11

- Launch of additional lesson series
- Number of lessons accessed reaches 1 million (Feb 2010)
- Further reduction in the tariff
- Launch of two new TV shows on BTV
- Launch of new mobile lesson series & quizzes linked to TV
- Calls per month increases dramatically
- Number of lessons accessed reaches 8 million (July 2011)

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Key mobile milestones 2012

Launch of BBC Janala Amar Engregi Course

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Key factors

- Availability of funds
- Formative research identifying a demand
- A strong brand reflecting values of the core target audience
- Promotion and cross promotion of the service
- Relationships with BTRC and mobile operators
- Sector expertise
- One to one interactions with potential users
- Continuous monitoring of audience reactions
- Continuous tracking of data

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Challenges for the future

- Giving users what they want without compromising ease of usability
- Monitoring and keeping up to date with target users' behaviour and technology adoption
- Persuading users to keep coming back to the service
- Continuing to monitor reasons for dropping out
- Sustainability of the service when funding ends

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USABILITY AND SUSTAINABILITY IN USING AUDIOVISUAL CONTENTS FOR ELT: BANGLADESH PERSPECTIVE

Mahbub Leelen, English in Action

Usability and sustainability in using audiovisual contents for ELT: Bangladesh perspective

Mahbub Leelen
Head of Materials Development
English in Action
mahbub.leelen@eiabd.com

ENGLISH in ACTION

Bangladesh: land and language

- Densely populated (160m) small country [147,570 square kilometers]
- Bangla is the official and dominant [98%] language

ENGLISH in ACTION

Questions for you

1. Where did you learn your 2nd language?

   [at school in your own country/in a country where the L2 is spoken/ other]

2. Did you have access to/use any technology to learn L2? ***If yes, then….***
   a. Which technology did you use?
   b. What was the learning process?
   c. Where did you get the technology support?
   d. Who produced contents? How did you find them?
   e. Did you face any challenge with technology to learn L2? What?

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EL/L2 context: Bangladesh

- Primary education is free and compulsory
- English is compulsory subject from grade 1 to grade 12

  [medium of instruction: mostly Bangla]
- Textbook is only THE MATERIAL for teaching and learning
- No assessment for speaking and listening
- Most of the teachers don't have ELT background

  [Most of the primary teachers don't have subject based background too]

- Learning English for work and education : **encouraged**
- Use of English for social communication: **not encouraged**

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AV and education context: Bangladesh

- Exposed to film (1899) and AV for more than a hundred year.
- AV is the most popular form of media among the society.
- Almost all parts of the country have access to AV media.
- AV contents are widely being used in Bangladesh for social education; i.e. awareness building, health and social campaign

  [and to some extent for professional development. i.e. Nursing].
- Use of AV in formal education:

  2005-12 : in small scale, many GO institutes & NGOs/INGOs are trying out AV for science, maths and English in formal education

  2008-17 : in large scale, English in Action is using AV for CLT/ELT in mainstream formal education [G1-10]

ENGLISH in ACTION

English in Action

[2008-2017]

- Nine years Programme started at the request of GoB with support of UK Government
- Started implementation in May 2008
- Three Phases of 3 years (pilot, up scaling, institutionalization)

- Management by BMB Mott MacDonald
  technical partners BBC-Media Action and OU-UK
  national partners UCEP and FIVDB

ENGLISH in ACTION

EIA Objectives and Interventions

- **Project Goal:** To contribute to the economic development of Bangladesh by providing English language as a tool for better access to the world economy
- **Project Purpose:** to increase significantly the number of people able to communicate in English, to levels that enable them to participate fully in economic and social activities and opportunities
- **Five Outputs:** will lead to achieving the project purpose
  (primary and secondary intervention, media and adult learning, research/M&E, institutionalisation & sustainability)

ENGLISH in ACTION

English in Action:
25 million learners to be reached by 2017

Target audiences

(i) Primary teachers and students,
(ii) Secondary teachers and students
(iii) Adult learners (youth)





Numbers for schools component

	2011	2014	2017
Teachers	730	12,500	80,000
Students	120,000	1,700,000	10,000,000
Schools	355	5,000	40,000

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EIA Key Components

- Audio, video and print based materials
  [Linked with school curriculum]
- Accessible and reliable technology
- Regular follow-up workshops [cluster meetings]
- Ongoing monitoring and evaluation




ENGLISH in ACTION

EIA Teacher Training

- Ongoing teacher support through peers in school and bi-monthly cluster meetings [follow-up workshops] over a period of 16 months with the support of Teacher Facilitators [TFs]
- Involvement of Head Teachers in classroom pedagogy, leadership and management
- Active involvements of Education Managers at Upazilas [sub districts] in monitoring, quality assurance and training



ENGLISH in ACTION

EIA Materials for Primary and Secondary schools

- Interactive and EfT based audio materials for classroom use
- Print based visual materials for students
- Print based study materials for teachers
- Audiovisual materials for teachers' professional development
- Audio materials for teachers' English language skill development



916 *audio files,* ***95*** *video clips,* ***17*** *books,* ***76*** *posters,* ***992*** *flashcards*

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EIA Primary and secondary AVmaterials

Audio based classroom materials

- **452 Primary** interactive audio lessons include instructions for students, stories, dialogues, songs, rhymes and games. Each of the primary textbook lesson has a series of audio files (2- 3 days) to be played in the classroom
- **227 Secondary** EfT based audios include stories, dialogues, listening passage and poems

Audio and video based TPD materials

- 38 primary and 24 secondary module based video clips
- 26 primary and 7 secondary video on additional classroom techniques
- 8 teachers talking audio for both primary and secondary based on 8 modules
- 8 sets of primary and 27 sets of secondary Classroom language audio files based on 8 modules

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Impact - Practice

Impact 1	Impact 2	Impact 3
Teachers' use of English in classrooms increased to 71% in primary and 86% in secondary	**Student Talk Time in the class increased from almost 0% to 25%**	**Substantial increase in Students participation in Communicative Practices**



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Impact - Competence

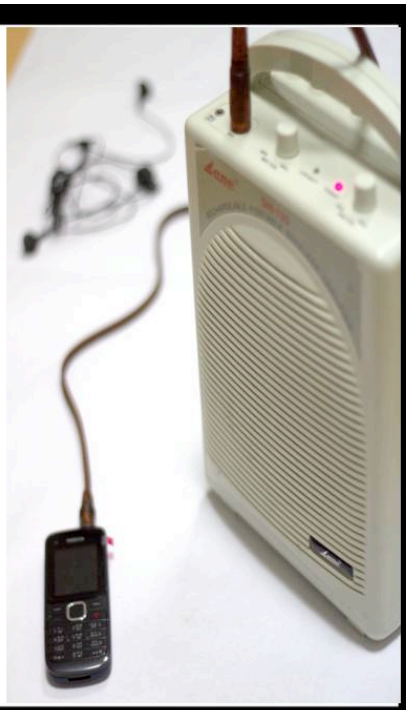
Impact 4	Impact 5
Teachers' English Competence increased significantly in one year	Students Competence Levels increased 15% and 19% in Primary and Secondary Schools respectively.

ENGLISH in ACTION

EIA technology: mobile phones for AV contents

- Mobile phone coverage: 97% of the population of Bangladesh
- Number of Mobile phone users: 95.53m [BTRC, August 2012]

- Almost all teachers are mobile phone users
- Maintenance facilities: available everywhere
- Cost effective



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Sustainability: plan, present and future

Teacher Training: Integrate EIA methods and materials in the formal pre and in-service training [already started with primary pre service: DPEd]

Materials: Create ownership and build capacity for other organizations to take over materials development activities

Technology Support: *Motivate teachers to use their own mobile phones for teaching and learning*

Future challenges for AV contents after project life

- Speaker [Who will take responsibility?]
- Replacing/reloading/updating contents [who will be responsible and how?]

ENGLISH in ACTION

Questions for discussion

1. What could be the proper storage mechanism of contents after project life? [finding and downloading issue]
2. What could be the proper process for finding new/appropriate contents?
3. What should be the mechanism for the development/collection of new contents?

ENGLISH in ACTION

ENGLISH in ACTION

Funded By:

UKaid
from the Department for International Development

Consortium Partners:

BMB Mott MacDonald
Mott MacDonald

Implemented by:

BBC MEDIA ACTION
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The Open University

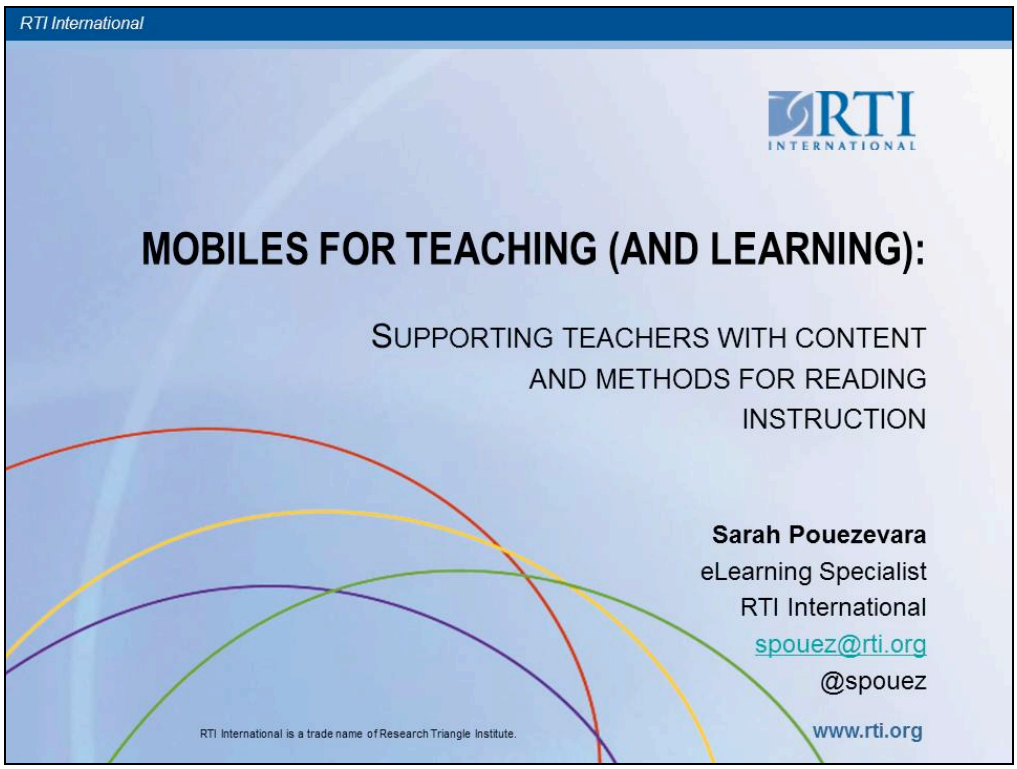
UCIEP
Since 1972

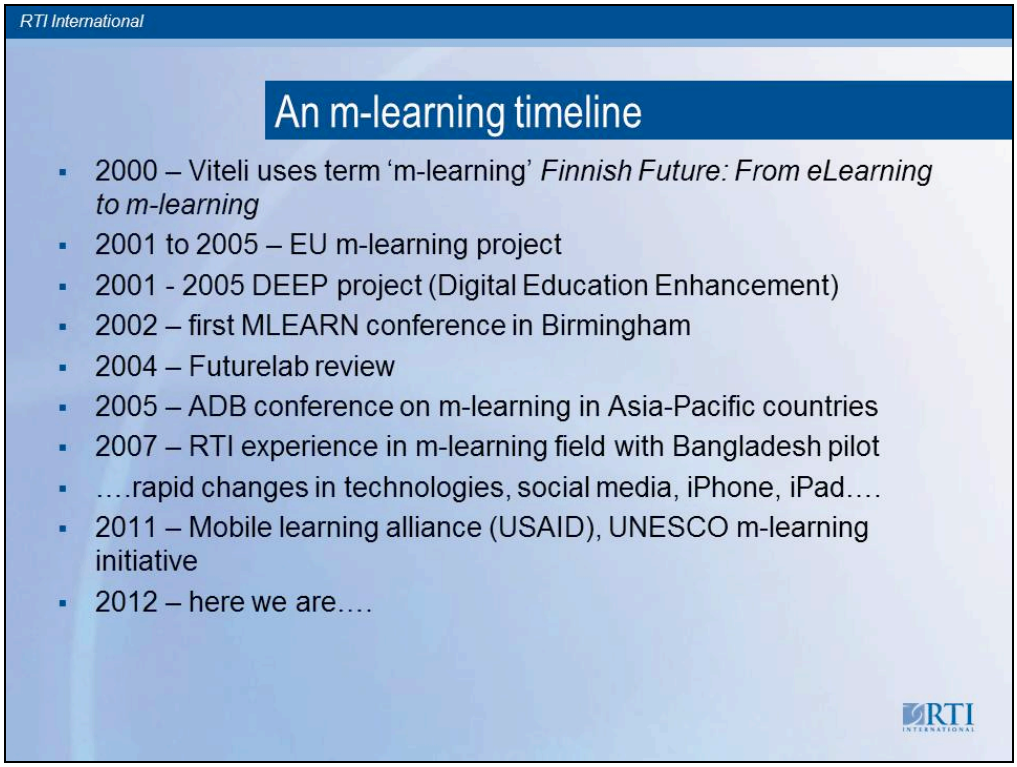
FIVDB

ENGLISH in ACTION

MOBILES FOR TEACHING (AND LEARNING): SUPPORTING TEACHERS WITH CONTENT AND METHODS FOR READING INSTRUCTION

Sarah Pouezevara & Carmen Strigel, RTI International





Why m-learning?

Tangible benefits, according to JISC, 2012

- Abstract (representational) and concrete (environmentally-situated) knowledge can be integrated
- Allows data to be recorded and learning processes captured wherever they happen.
- Contextualisation through location-aware features such as GPS.
- Reduces technical barriers to e-learning
- Pervasive and ubiquitous
- Increases accessibility for learners with special educational needs
- Access to mentors, tutors and others learners on-the-move.
- Allows access to learning by those in dispersed communities and isolated situations
- Enable new learning environments
- Peer-to-peer networks make learning more student-centered.
- Encourages reflection in close proximity to the learning event
- Immediacy of communication (including speech and data-sharing)
- Fit into the lives of learners (allow for productive 'dead' time - e.g. when travelling or queuing
- Portable - allow anywhere, anytime learning
- Personal, private and familiar (reduce perceived barriers to learning)
- Bite-sized e-learning resources can be delivered to learners (especially useful for basic skills or work-based learning)
- Perceived as an acceptable way for learners to receive reminders and chasers - and manage their time.
- Promotes active learning

RTI International

Categories of m-learning benefits

- Accessibility
  - access to learning opportunities, content, experts/mentors, other learners
- Immediacy
  - on-demand learning, real-time communication and data sharing, situated learning
- Personalization
  - bite-size learning on familiar devices; promotes active learning and a more personalized experience
- Intelligence
  - advanced features make learning richer through location-aware features, data capture, multimedia

Why?

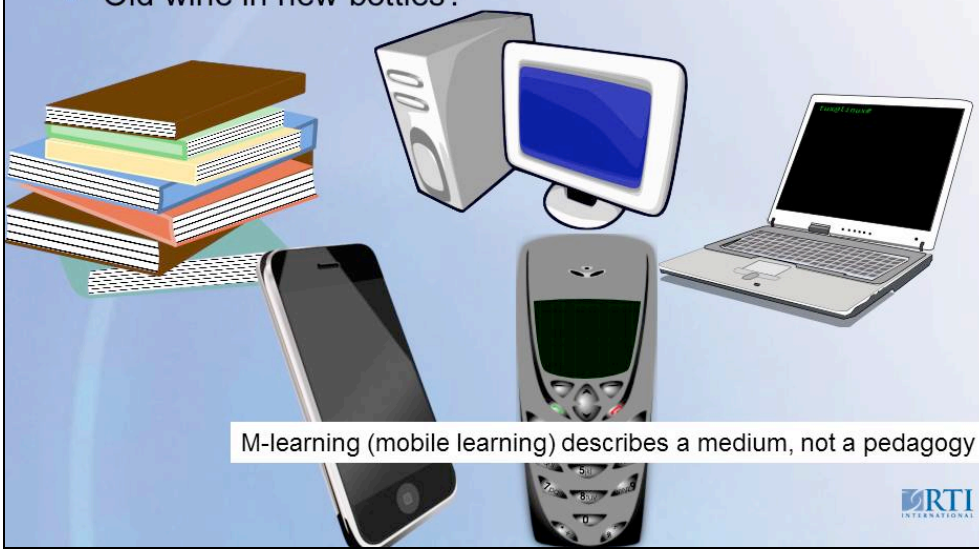
"…just the right content, on just the right device, for just the right person, at just the right time."

- Wayne Hodgins, "The Future of Learning Objects," presentation at the Learning Objects Forum, Menlo Park, California, September 3, 2002.

… and just the right cost….

M-learning: How?

- Old wine in new bottles?



M-learning (mobile learning) describes a medium, not a pedagogy

M-learning content development

Micro-learning

- Learning in 'bite size' pieces
- Delivered at strategic times (coaching)

Motivation for learning!

- Apps and games

Mastery of learning

- Spot checking learning
- Data analytics

m-Learning for development

- Accessibility: to devices and from devices to content
- Teacher training crisis can be mediated by forms of open and distance learning. M-learning can support this.
- How does our framework help design content?
  - Microlearning
  - Multimedia learning
  - Mastery of learning
- Kenya – PRIMR program research

PRIMR research design

Treatment Group (N=20)	PRIMR inst. approach	ICT intervention	Research question
Control	No	None	Does the PRIMR instructional approach improve teaching and learning?
PRIMR + Coach tablets	Yes	Coaches with tablet loaded with m-learning content	Does coaching (and subsequently, teaching) improve when teachers have access to audiovisual models and coaching support at least once every 2 weeks?
PRIMR + Teacher tablet	Yes	Coaches and teachers provided tablet with m-learning content	Does regular, day-to-day access to audiovisual models, assessment tools, as well as a more user-friendly teaching guide, improve teaching ?
PRIMR + Student e-reader	Yes	Students with e-readers, loaded with PRIMR content and outside books	Does providing children with more reading material improve outcomes?

Tangerine™

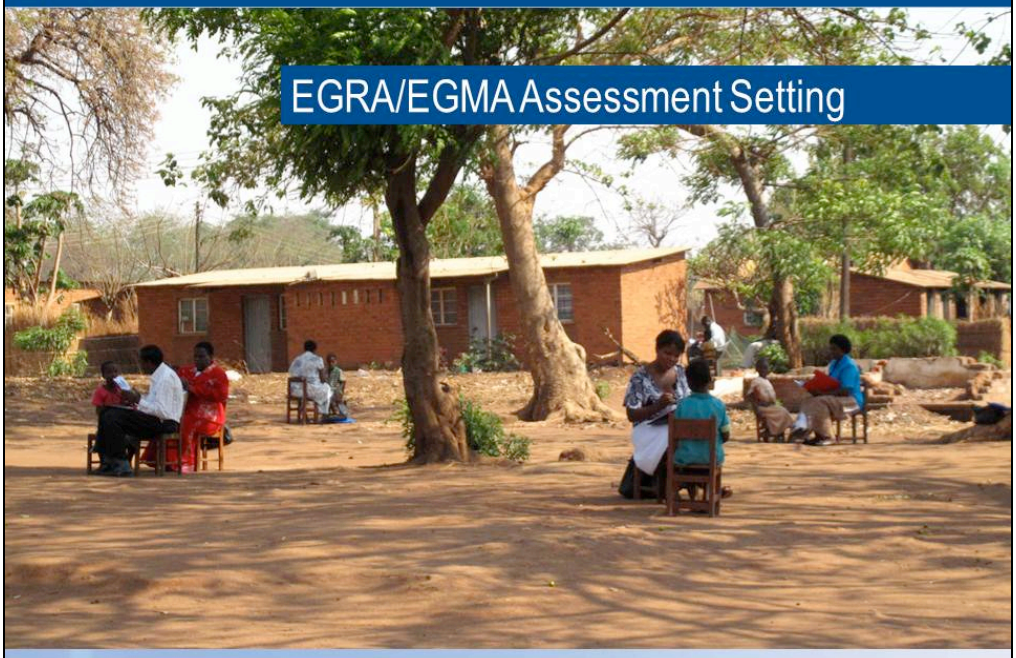
Easier assessment,
better data,
faster results.

RTI INTERNATIONAL

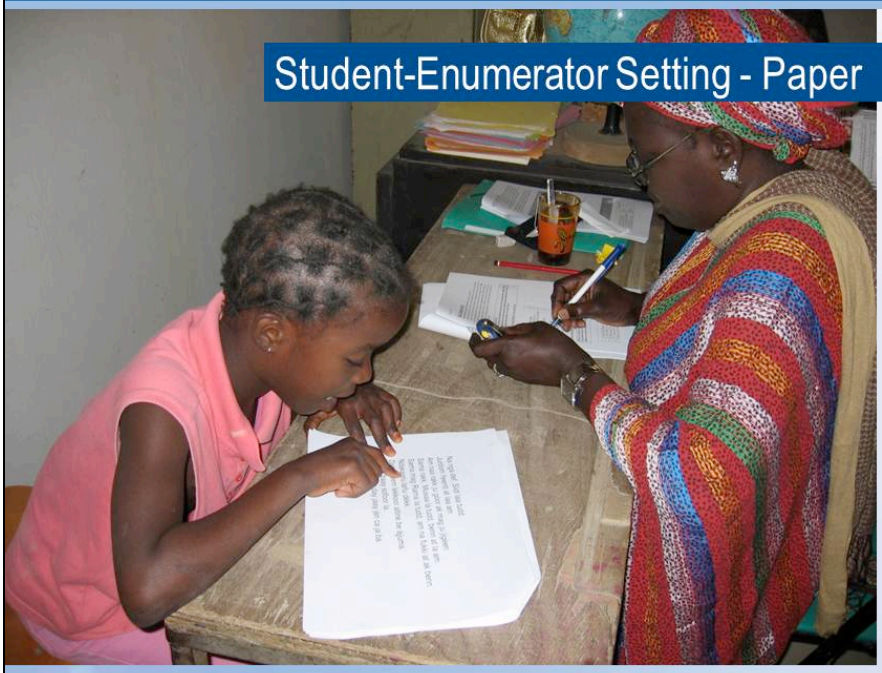
tangerine™

www.rti.org

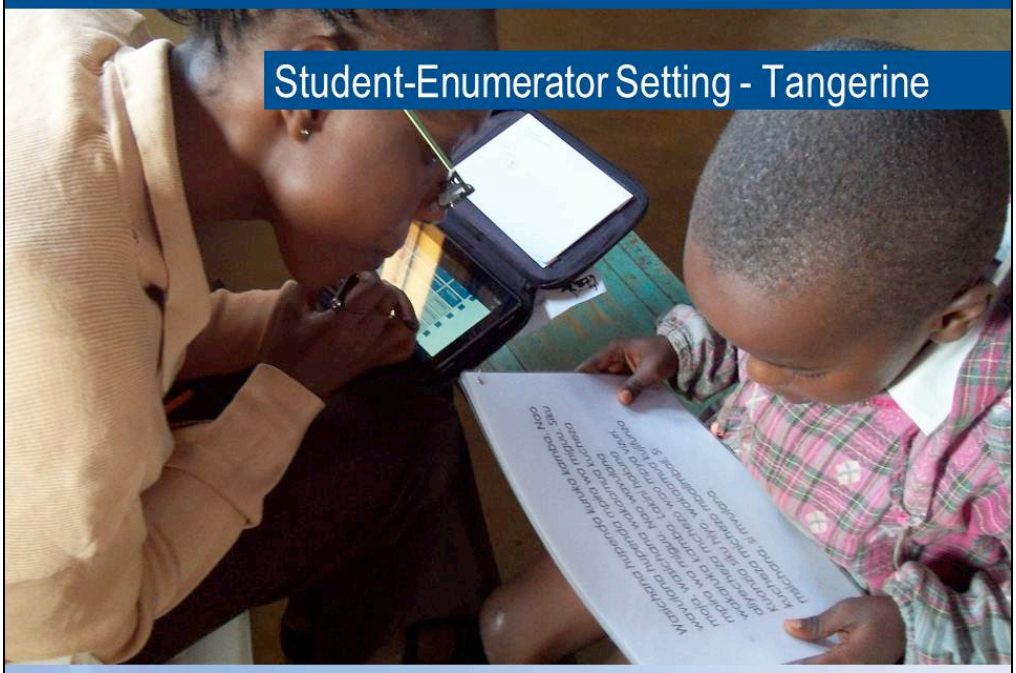
EGRA/EGMA Assessment Setting



Student-Enumerator Setting - Paper



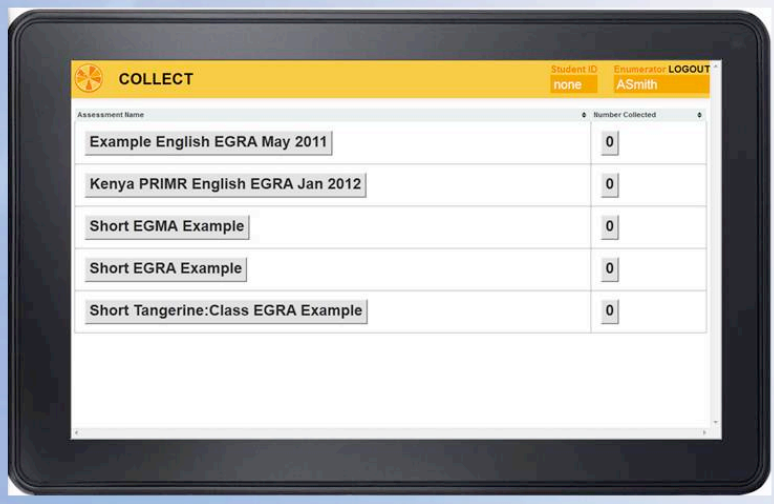
Student-Enumerator Setting - Tangerine



What is Tangerine™?

- Data collection software designed for mobile computers
  - for recording students' responses in oral early grade reading (EGRA) and mathematics (EGMA) assessments
  - to capture interview responses from students, teachers, and principals on home and school context
- Uses cutting-edge open source technologies including CouchDB and HTML5
  - Compatible across a wide range of mobile devices, languages and scripts; browser-based but Internet independent
  - Enables devices to synchronize data with a central database over a variety of connection types
- Integrates a wizard and page templates for customization of each page and item of the assessment or interview

Tangerine on Tablet

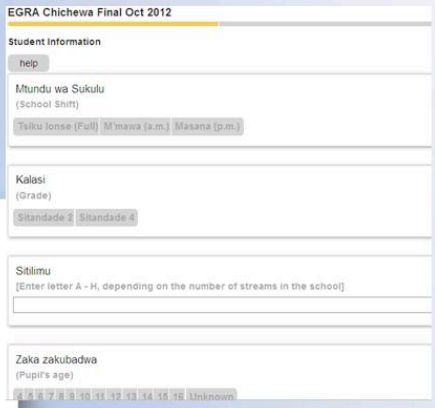


Screens

Paper

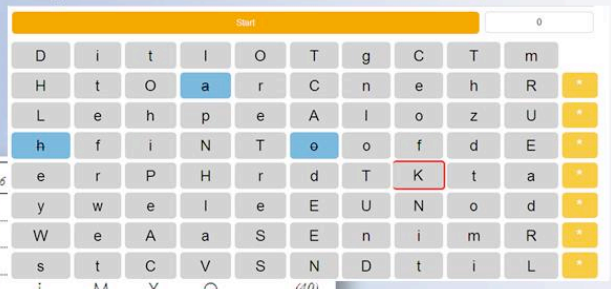
G. Student's grade	o 1 = 1st grade o 2 = 2nd grade o 3 = 3rd grade o 4 = 4th grade
H. Class name or section:	
I. Student's month and year of birth :	Month : ____ Year : _____
J. Student's gender	O 1 = girl O 0 = boy
K. Time Started:	___ : ___ am / pm

Tangerine

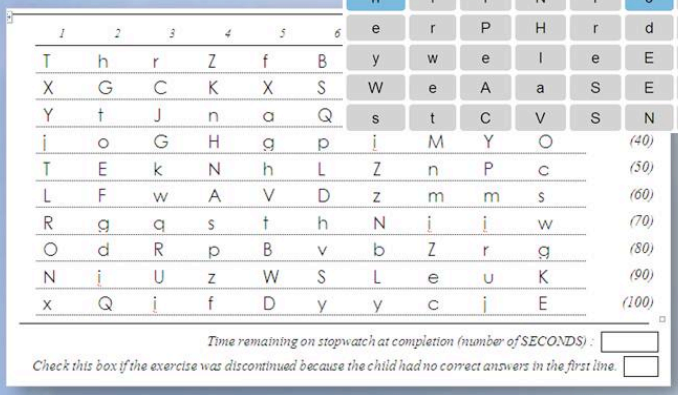


Screens

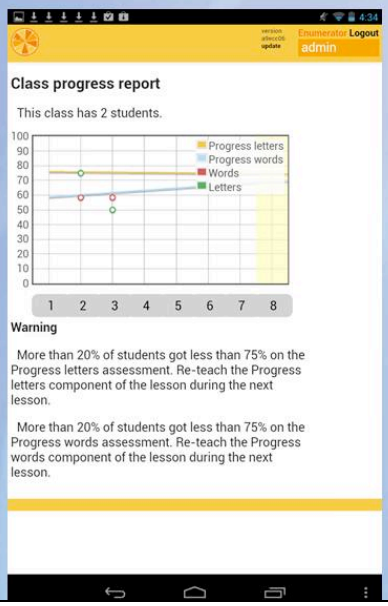
Tangerine



Paper



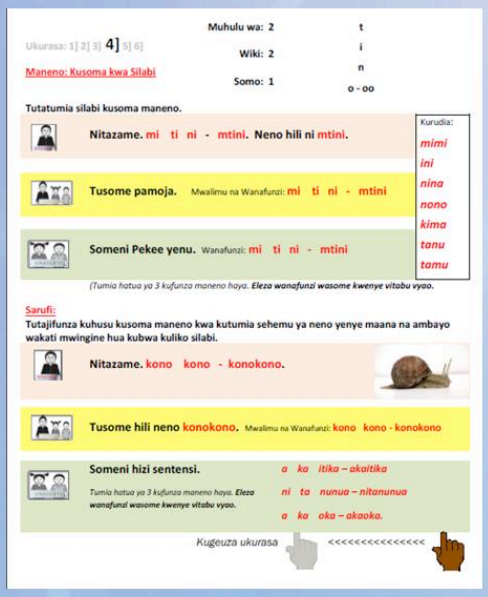
Tangerine: Class



- Tangerine:Class is a customized version of Tangerine, optimized for smartphones
- Targeted for teacher use to facilitate classroom-based continuous assessments
- Provides options for individual student tracking and exporting of individual and classroom-based report cards with simple graphs

Tangerine:Class on Smartphone

Multimedia teachers guide



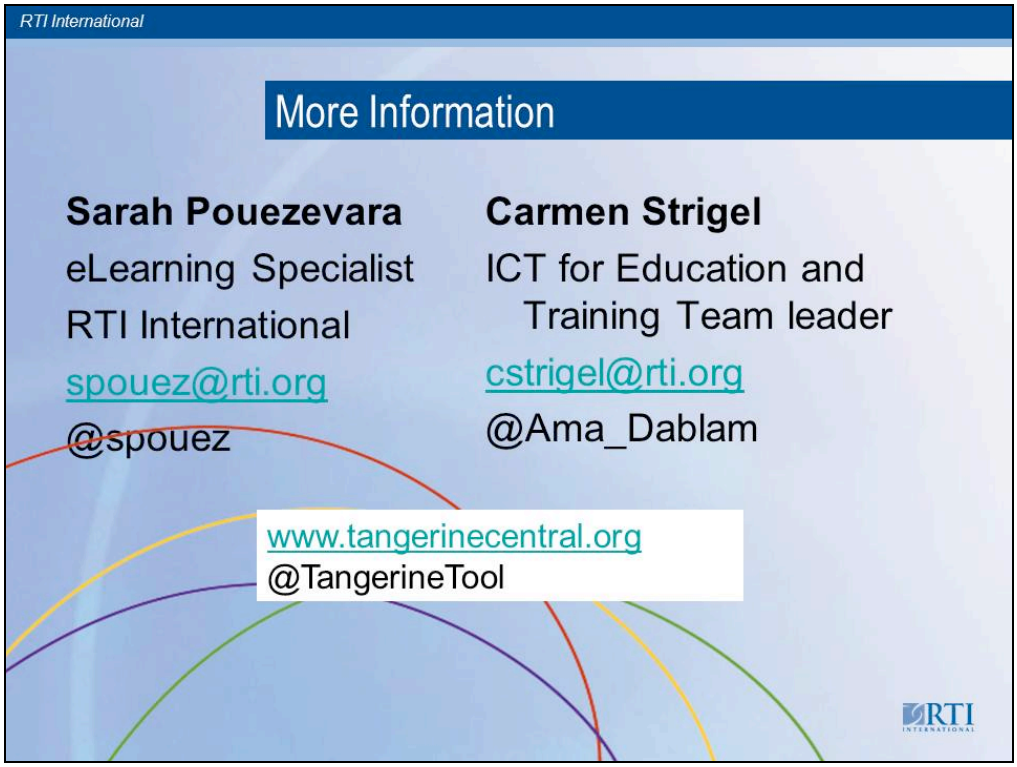
- Audio/visual materials strategically placed throughout the teachers guide
  - Letter sounds
  - Images of new vocabulary
  - Audio word-building grids
  - Model teaching videos
  - read-aloud stories

Challenges

- Scaling up:
  - Cost of tablets
  - Classroom/school dynamics
- Will the results show significant difference?
  - Implementation fidelity
  - Learning as we go
- Is motivation reason enough?

"Professional development is a process, not an event."

- (Loucks-Horsley *et al., 1987, 1998*), Cited in Guskey (2002), Professional Development and Teacher Change



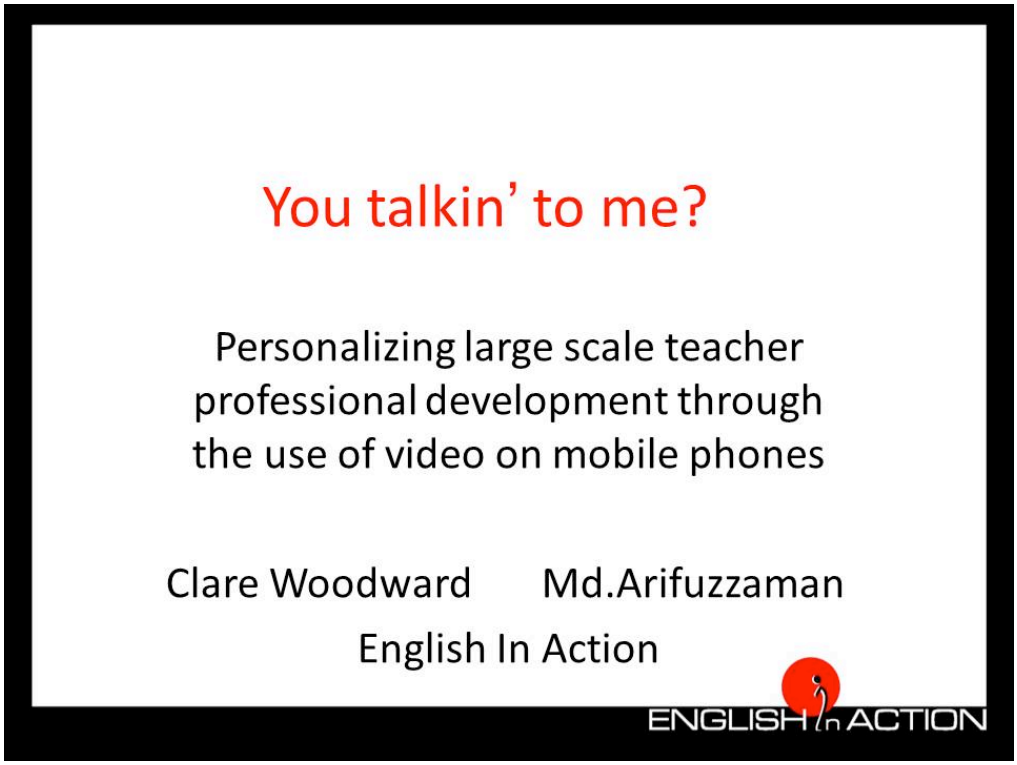
ENGLISH IN ACTION: SCHOOL BASED TEACHER DEVELOPMENT IN BANGLADESH

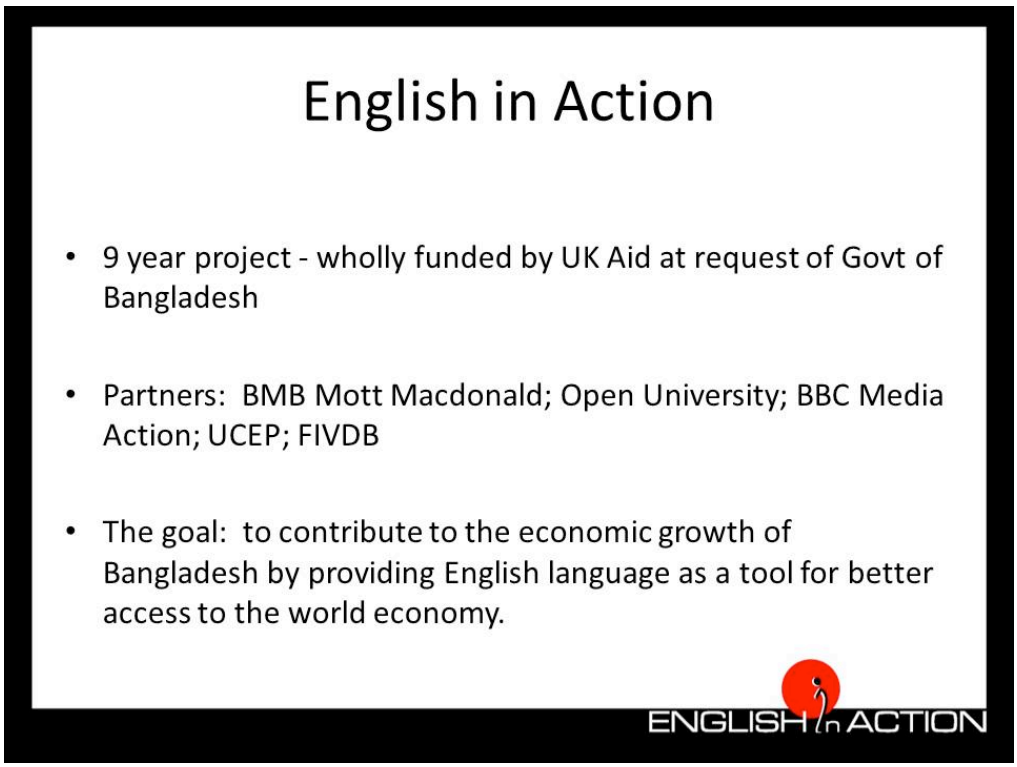
Tom Power, Dr. Robina Shaheen & Claire Hedges, The Open University & English in Action

Presentation available at: http://prezi.com/wrb4njh0hwca/school-based-teacher-development-in-bangladesh/

"YOU TALKIN' TO ME?" PERSONALIZING LARGE SCALE TEACHER PROFESSIONAL DEVELOPMENT THROUGH THE USE OF VIDEO ON MOBILE PHONES

Clare Woodward, Mike Solly & Mohammed Arifuzzaman, The Open University & English in Action





Previous English projects

- "most reform attempts have suffered from a lack of planning…not providing supportive resources…isolated attempts and lack of co-ordinated long-term focus"

- "In spite of a general improvement in T's knowledge *about* CLT ….little evidence of much difference in classroom practice"

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Recommendations

- "it is crucial that the training needs to "make sense" to the trainees" (reflective practice)
- "observation and analysis of actual classroom practices…."
- "attention given to the trainees (and trainers) EL skills."
- "an element of peer guidance and counselling"

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THE STORY

JUNE – DECEMBER 2008

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PLANNING THE PILOT

JANUARY 2009 – DECEMBER 2009

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The PILOT

February 2010 – May 2011

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TEACHERS' FEEDBACK

Not real teachers, text book, curriculum, large classes, no resources, can't do it in our classes.

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"EIA is not like other projects. In other projects we go for training and after the training is finished everything is forgotten when we go back to the school"

Secondary teacher from Khulna

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The concept for scaling up
June 2011 – Sept 2011

ENGLISH in ACTION

We can do it on flip!

ENGLISH in ACTION

Filming, editing and uploading
October 2011-March 2012

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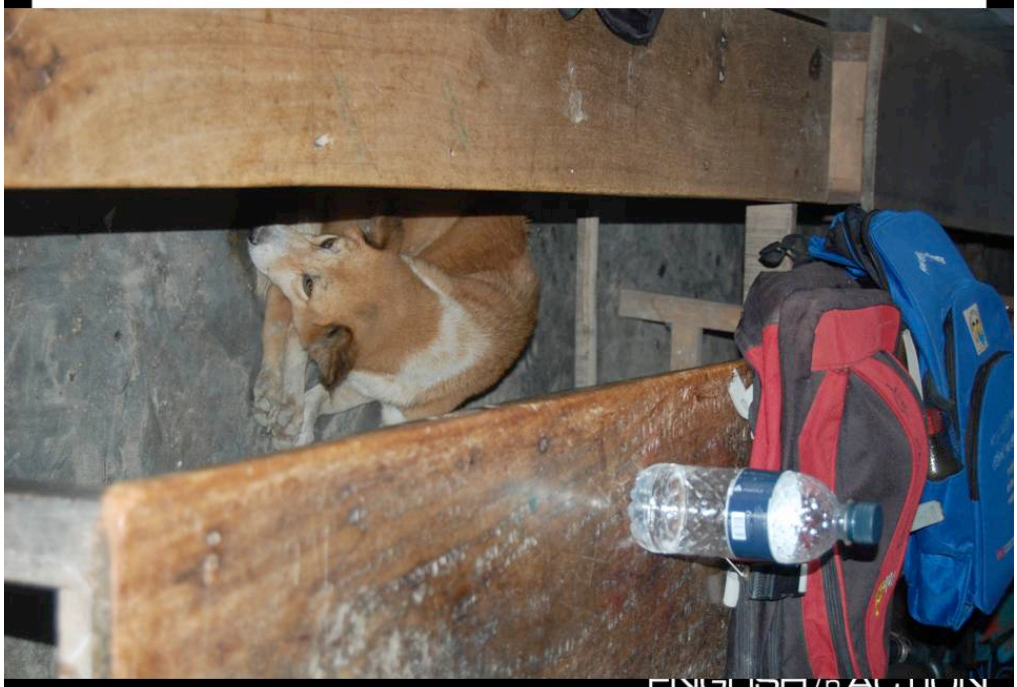
ENGLISH in ACTION



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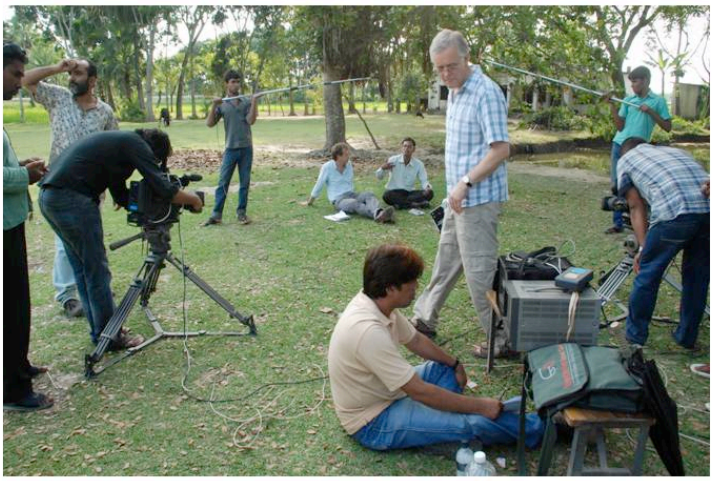
ENGLISH in ACTION



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Mediated video

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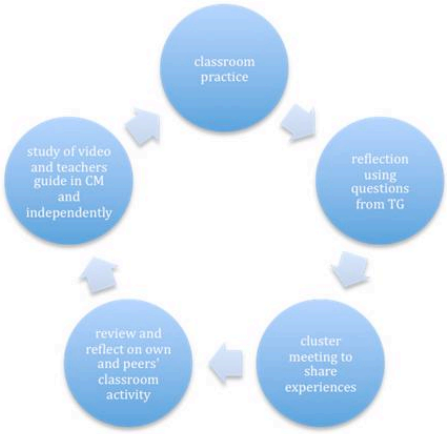
Video materials linked to:

- Classroom practice
- Reflection
- Cluster meeting
- Peer experiences
- Teachers' Guide



ENGLISH in ACTION

Try in the classroom 1: Acting out dialogues

Repeating dialogues can give students confidence in speaking English, especially shy students and those who need more support. Dialogues can also be used as a model for freer dialogues and conversations. Here are some tips for using dialogues for freer speaking practice:

- Choose dialogues that are short and not too difficult
- Choose dialogues that students can adapt to their own situations, where they can talk about themselves
- Make sure students repeat or practise the dialogue first so that they are confident and understand the language
- Model freer dialogues in front of the class first
- Write key words and sentences on the blackboard as prompts (similar to video clip SM7-V1)
- When students are ready, get them to work in pairs or groups so that everybody can practise speaking.

Practise (icon)
Look at the next few lessons of *English for Today* and find a dialogue or choose part of a dialogue. Get your students to repeat the dialogue (as you did in Module 3). When students are confident, act out the dialogue in front of the class with a volunteer. Don't read the dialogue from the book, you don't need to use the same words, just try to have a similar conversation. You can use prompts written on the blackboard to help the students with key vocabulary and phrases. Get your students to act out dialogues in pairs or groups.

Reflect (icon)

- What dialogue did you choose?
- Were your students happy to volunteer?
- How did you and your students find 'acting out' the dialogue in front of the class?
- Were your conversations very similar or quite different to the original dialogue?
- Did your students work well in pairs or groups?
- Did they use English?

Write down your answers to these questions in your journal and bring them to the next cluster meeting.

ENGLISH in ACTION

Nokia C1-01

4GB Micro SD Card
(inside the Mobile)

Rechargeable Speaker

ENGLISH in ACTION

Initial teacher workshops
May - June 2012

ENGLISH in ACTION


WORKBOOK

Summary points

- Investigating reality of Bangladeshi teachers' real lives
- Maximizing their familiarity with technology – mobile phones
- Not imposing high tech and high pressure change
- Integrating with their current syllabus and textbooks
- Being authentic

ENGLISH in ACTION

USING MOBILE PHONES FOR HEALTH AND LEGAL RIGHTS EDUCATION WITH COMMUNITIES DISPROPORTIONALLY AT RISK OF HIV IN THAILAND

Christopher Walsh, Nada Chaiyajit, Bruce Lasky & Wendy Morrish (Bridges Across Borders Southeast Asia Community Legal Education Initiative (BASEA CLE))

Using mobile phones for health and legal rights education with communities disproportionally at risk of HIV in Thailand

Dr Christopher Walsh
Nada Chaiyajit
Bruce Lasky
Wendy Morrish

Bridges Across Borders Southeast Asia Community Legal Education Initiative (BASEA CLE)

http://www.babseacle.org/

Who we are

Bridges Across Borders Southeast Asia Community Legal Education Initiative (BABSEA CLE) is an international access to justice, legal education organisation, that focuses on ethically oriented legal capacity development and community empowerment.

Since 2003, BABSEA CLE has been working collaboratively with universities, law students, law faculty, lawyers, members of the legal community, and justice related organizational partners to develop CLE and legal clinic programs throughout Southeast Asia. These programs and clinics assist communities, provide legal aid services and simultaneously help build the next generation of social justice, pro-bono minded champions.

Context

Local responses to the global HIV and AIDS epidemic cannot be effective unless the human and legal rights of those infected and affected by HIV are clearly and undeniably addressed (amfAR, 2008).

Globally, four decades into the HIV and AIDS epidemic, many countries, including Thailand, have adverse or unfriendly legal environments that potentially undermine the impact of HIV and AIDS outreach and prevention programmes.

The "Land of Smiles"?

Often referred to 'as the land of smiles', Thailand is generally viewed as a tolerant country in regards to its lesbian, gay, bisexual and transgender (LGBT) communities.

Thai gay men, other MSM, sex workers and transgenders face extreme stigma and discrimination (Breton, 2009; Brenton and Gonzalez-Figueroa, 2009; UNESCO, 2011; WHO, 2011).

This is particularly true for transgender individuals (Nakpor, 2011; UNESCO, 2011). They are also victims of gender-based violence (Egremy, Betron, Eckman, 2009).

Stigma and discrimination towards Thai LGBT and other MSM

Political upheaval and civil unrest: The "Red Shirts" v "The Yellow Shirts"

Increased social upheaval—in tandem with already existing stigma and discrimination towards men that have sex with men (MSM), male sex workers (MSW) and transgender (TG) communities—may precipitate a disruption of existing HIV/AIDS outreach and prevention.

Standing in solidarity with marginalised groups

Unlike some Thai officials and policymakers, BABSEA CLE believes the trite notion of 'tolerance' is not helpful for gay men, other MSM, sex workers and transgender individuals who need to understand and navigate personal risk to HIV.

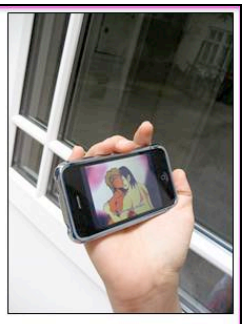
Instead it is likely to increase their vulnerability to the virus.

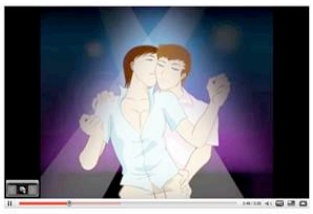
Vulnerability to the virus prior to the moment of exposure takes the form of stigma and discrimination directed at these groups.

One way to confront stigma and discrimination is to educate marginalised populations about their legal & human rights.

2 Interventions:

- Popular Opinion Leader (POL) & Online Peer Outreach & Prevention (OPOP) using Sexperts! (RFSL Stockholm, 2009)
- Both interventions employ screen based animations to help the target populations understand personal risk to HIV and reduce stigma.
- Peer outreach workers access and distribute them via mobile phones and MP3 players when engaging in HIV prevention and legal rights education.





Sexperts! Online peer outreach and prevention (OPOP)

Sexperts!

A ‘Sexpert!’ is essentially an expert about sex. They specialise in making peers feel comfortable talking about their sexual practices. They provide HIV, sexual health and legal rights education in non-threatening and anonymous virtual environments.

A priority for Sexperts is to openly acknowledge the pleasure in having sex while discussing sex with peers online. A Sexpert understands that making a person feel guilty about their sexual practices will sacrifice any viable opportunity to discuss safe sex and personal risk to HIV.

Unlike doctors, social workers or therapists, Sexperts are peers recruited from stakeholder communities who receive specialised training, practice and supervision.

Background to the Mplus & TLBz Sexperts! Online counseling service

- In Thailand gay men, other men that have sex with men (MSM) and transgenders face extreme human rights abuses and gender based violence. Additionally, HIV prevalence among these groups is high (as high as 28% in 2011) and condom uses is inconsistent among these groups (Chemnasiri et al., 2010).
- These groups need programs that simultaneously meet their sexual health and human rights needs.
- Mplus Sexperts & TLBz Sexperts! are online peer counseling services designed to provide a safe space for gay men, other MSM, sex workers and transgenders to share their experiences and talk about sex and their rights.
- Mplus & TLBz Sexperts! are unique because they are low cost community based examples that integrate HIV prevention and human rights education within a peer-based counseling service designed to empower communities disproportionally are risk of HIV with the goal of making them feel proud about who they are.

Sample chat

Mplus: ถ้ามีเพศสัมพันธ์ ก็ต้องป้องกันไว้ก่อนนะคับ (If you have sex, it is better to practice safe sex.)

A1: ผมใส่ถุงยางครับ (Yes. I use a condom.)

Mplus: ใช้ถุงยางอนามัยทุกครั้งนะน้องดีคับ (Use a condom every time you have sex.)

A1: ไม่ให้ใครสดครับ (Of course, I don't do barebacking.)

Mplus : คับ (Good.)

A1: เล่นหมู่นี่เสียงมั้ยครับ (So if we have group sex, is it risky behaviour?)

Mplus: มีโอกาสเสี่ยงค่อนข้างสูงนะคับ ถ้าเราไม่ป้องกัน (It can be high risk if you don't practice safe sex.)

A1: แต่ถ้าทุกคน ใส่ถุงก็จะดีใช่มั้ยครับ (But if everyone uses a condom, it is ok?)

Mplus: ใช้คับ แต่ถุงยาง ควรเปลี่ยนทุกครั้ง นะ (Yes but you have to change the condom every time you have sex with a different person.)

A1: ถ้าเค้าสอดใส่อีกคนแล้ว เค้าจะสอดใส่ผม ผมจะให้เค้าเปลี่ยนถุงให้ใหม่ครับ (If someone puts his penis into another guy and then he puts it in me...I should ask him change to a new condom?)

Mplus: ใช่แล้วคับ (Yes, exactly)

A1: ขอบคุณน่ะครับ สำหรับข้อมูลดีๆๆๆๆๆๆๆๆ (Thanks so much for the very good information.)

Mplus outcomes

After 10 months:

- 1200+ Online Chats (3 Online peer outreach workers)
- 3 Hours 7 days a week
- 100s of referrals to testing centres, local free community legal clinics and other frontline organisations
- Funded by amfAR and The AFAO
- www.mplusthailand.com

Sexperts! are a low-cost peer counseling service using social networks on mobile phones

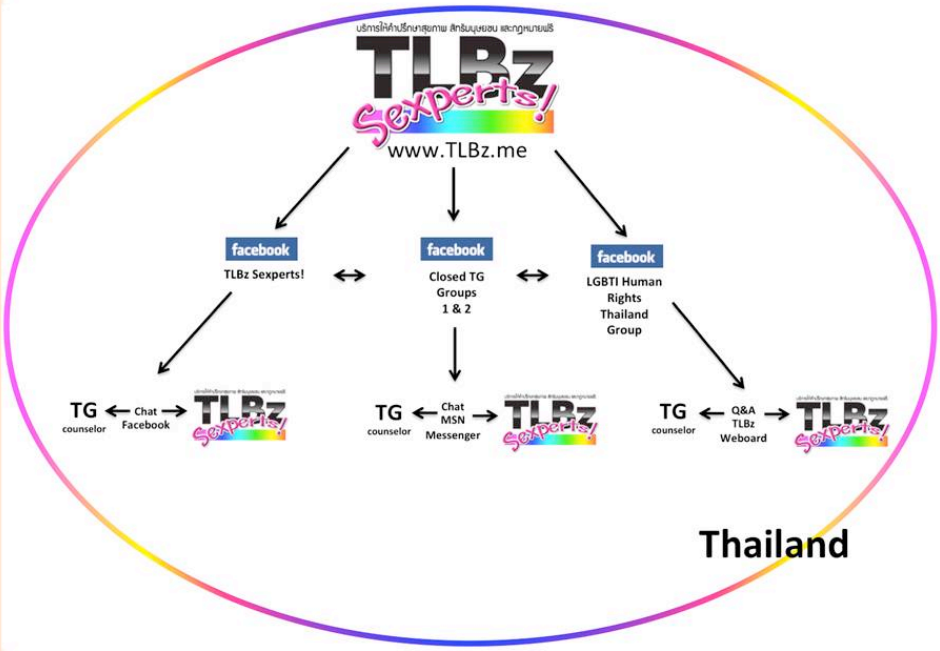
- They are virtual community based groups
- They are Thai gay men, other men that have sex with men, sex workers & transgenders helping their community overcome stigma, discrimination and human rights abuses while simultaneously providing HIV prevention

- www.TLBz.me
- www.facebook.com/TLBzSexperts
- www.mplusthailand.com
- http://www.facebook.com/mplus.msm?fref=ts
- MSN instant messaging: TLBz.Sexpert@hotmail.com
- MSN instant messaging: mplus.sexperT@hotmail.com or 053 214 073 (telephone)

TLBz Sexperts! methods

- They network with 2 Thai transgender groups (1019 members) and 1 LGBTI Human Rights group (2078 members) on Facebook
- On Facebook they disseminate information about sexual pleasure, safe sex, personal risk to HIV, and legal and human rights through TLBz.me and the TLBzSexperts Facebook page
- Using all 3 Facebook sites, they advertise that a TLBz Sexperts! (peer counselor) is available to chat about any issue important to transgender life in Thailand
- They usually start chatting about beauty, hormone use, surgery, boyfriends, sex and how to deal with gender transformation and the resulting stigma and discrimination
- Within these chats, they then weave in information about safe sex, personal risk to HIV and other STIs and how to access justice if a transgender finds her rights violated.
- They also educate transgenders about their legal rights under the Thai constitution and let them know that they have rights and that we (TLBz Sexperts) are here together to fight for transgender rights.
- They chat privately via MSN messenger or Facebook chat Monday – Friday 8:30-11:30 PM or on the TLBz weboard (24/7) and this happens primarily via mobile phones

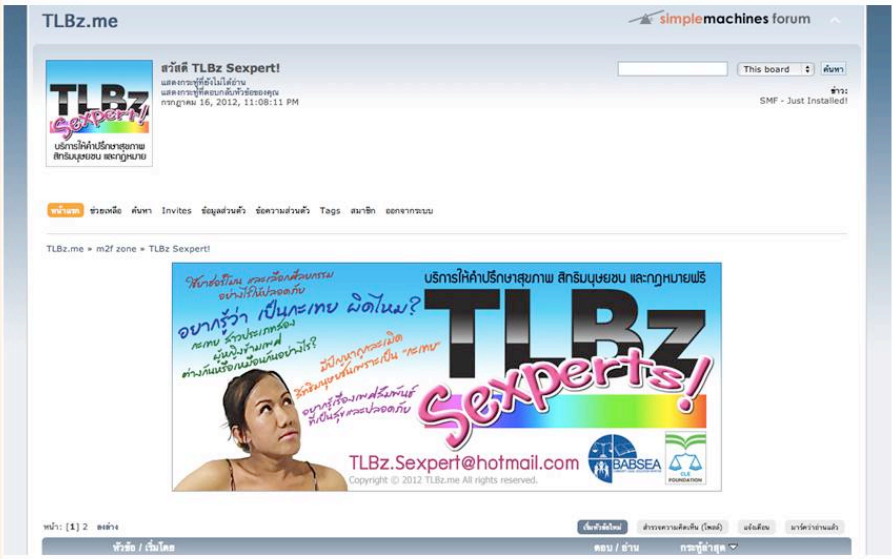
How does TLBz Sexperts! work?



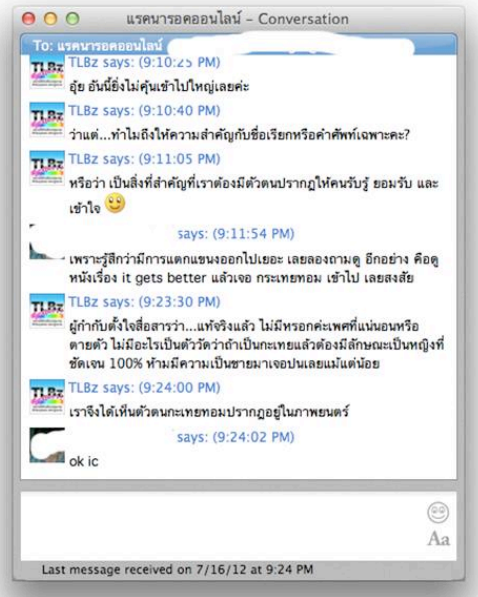
TLBz Sexperts! page

TLBz Sexperts! Peer counseling advertisement

www.TLBz.me Weboard



MSN Instant messaging



TLBz Sexperts! outcomes

They have sexpertise...

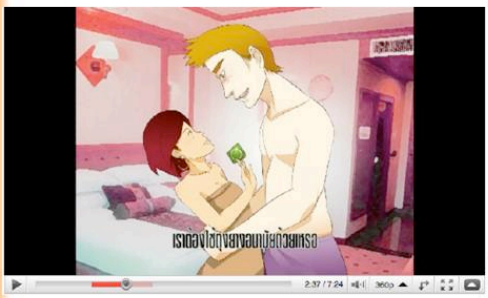
- **Effective! Because since September 2011 we have had over 500 chats.**
- **Their approach is low cost because they use social networking effectively.**
- **Their approach is unique because it builds trust and empowers Thai TG individuals and communities.**
- **Their approach is effective because it integrates sexual health and human rights education within a peer-based counseling service.**
- **Their approach helps TGs understand personal risk to HIV and is empowering at the same time.**

บริการให้คำปรึกษาสุขภาพ สิทธิมนุษยชน และกฎหมายเรื่อง

TLBz Sexperts!

The projects aim to reduce new HIV infections primarily through mobile phone-based peer education and counselling via instant messaging platforms on social networks. This HIV prevention and rights education is empowering and esteem building.

The projects also use animations to promote sexual health, legal and human rights and access to contextualised high-quality HIV prevention on mobile phones through outreach to venues and/or online communities where member of these marginalised communities meet to find sexual partners.



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Walsh, C.S., Lasky, B., and Morrish, W. (in press). Protecting Public Health and Promote Social Justice Through Online Peer Education and Clinical Legal Education. *Transforming Governments,*

Chaiyajit, N. & Walsh, C. S. (2012). Sexperts! Disrupting injustice with digital community-led HIV prevention and legal rights education in Thailand. *Digital Culture & Education*, 4(1), pp. 145–165.