

Harnessing the Potential of ICTs

Literacy and Numeracy Programmes using Radio, TV, Mobile Phones, Tablets and Computers



United Nations
Educational, Scientific and
Cultural Organization



UNESCO Institute
for Lifelong Learning

Harnessing the Potential of ICTs for Literacy Teaching and Learning

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Literacy and Numeracy Programmes using Radio,
TV, Mobile Phones, Tablets and Computers

Case studies from the UNESCO Effective Literacy
and Numeracy Practices Database (LitBase)

<http://www.unesco.org/uil/litbase>



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Foreword

Lifelong learning is the vision guiding the Education 2030 Framework for Action. To implement this Framework, flexible and accessible learning opportunities must be provided using different pathways, modalities, mechanisms, and channels such as information and communication technologies (ICTs). Mobile technologies in particular are regarded as highly promising for accelerating progress towards the literacy target. They are expected to motivate learners, to promote quality and effective learning, and to deliver services more efficiently. However, the great potential for ICTs to benefit literacy teaching and learning is also challenged by limitations, one of them being the lack of research and evidence on the impact of mobile learning on literacy skills.

This publication provides a selection of literacy programmes that use radio, TV, mobile phones, tablets and computers to support the development of literacy, numeracy and language skills. Due to continuous demand, the second edition of the publication has been updated with new case studies. All programmes included in this publication are also available on UNESCO's Effective Literacy and Numeracy Practices database (LitBase). This database allows users to identify trends, challenges and lessons learnt in applying ICTs to literacy teaching and learning worldwide. The programmes share valuable examples of how ICTs can be used creatively and innovatively to complement face-to-face adult literacy teaching. They highlight the prerequisites that must be met to reach the full potential of ICTs.

Many programmes featured in this publication are a testimonial to the empowering impact of mobile technologies on young and adult women. Other programmes allow learners to practise and progress at their own pace, at their convenience and in different locations. Learners can connect and interact with each other through internet platforms. There are limitless possibilities for empowering and engaging strategies, thus nurturing high expectations for the future use of ICTs in adult literacy and education.

The literacy programmes supported by ICTs in this publication show that harnessing the potential of ICTs is also challenging, particularly in rural contexts with poor infrastructures. Most countries are still too far removed from conditions that would allow them to use ICTs optimally. However, we are also observing rapid developments, particularly with regard to smartphone technologies. The examples in this publication offer creative solutions and strategies that may encourage literacy stakeholders, including policy-makers, programme providers and practitioners, to invest in new technologies that address the learning needs of young people and adults with lower skill levels in reading and writing.

It is my hope that this publication contributes to the advancement of innovative and effective ICT-oriented solutions for literacy teaching and learning. It should support the building of a more solid knowledge base for what works (and what doesn't) in the field of adult literacy programmes using ICTs.

Arne Carlsen, Director UIL

Introduction

The right to education as recognised by the Universal Declaration of Human Rights includes the acquisition of literacy, numeracy and other basic skills as a foundation for lifelong learning. Lifelong learning is a central principle of the international post-2015 education agenda. In its Position Paper on Education Post-2015, UNESCO proposes that «flexible lifelong and life-wide learning opportunities should be provided through formal, non-formal and informal pathways, including by harnessing the potential of ICTs to create a new culture of learning» (UNESCO, 2014:4). UNESCO values the role of ICTs in providing universal access to education, equity in education, quality learning and teaching as well as teachers' professional development. If policies, technologies and capacities allow, education management, governance and administration can also be improved by means of ICTs.

The Belém Framework for Action (UIL, 2010), in its article 11 on Adult Literacy, states that «Literacy is an indispensable foundation that enables young people and adults to engage in learning opportunities at all stages of the learning continuum» (ibid., p.6). As an age-independent, context-bound and continuous process, the acquisition and development of literacy takes place both within and outside explicitly educational settings and throughout life. Increasingly, reading, writing, language and numeracy are viewed as part of a broader conception of key competencies, including ICT skills, which require sustained learning and updating. Instead of being perceived as a stand-alone set of skills to be developed and completed in a short time frame, literacy and numeracy are increasingly seen as fundamental components of a complex set of foundational or basic skills.

As a consequence, a number of UNESCO member states have included ICT skills, together with other essential skills, in their literacy definitions (UIL, 2013:21). With the implementation of the OECD Programme for the International Assessment of Adult Competences (PIAAC), the use of ICT skills was introduced as one of the new elements into direct testing of literacy skills. Problem solving in technology-rich environments «as the ability to use digital technology, communication tools and networks to acquire and evaluate information, communicate with others and perform practical tasks» (OECD, 2013: 59), includes the use of computers at different proficiency levels.

However, ICT skills do not only represent a novel dimension which has been integrated in official literacy definitions and major surveys to assess skills levels among the adult population of participating countries. Different technologies have been used already for decades to support adult education and learning. These include radio, television and audio and video cassettes. More recently digital ICTs such as computers, tablets, e-books, and mobile technology have spread at great speed and also found their way into the teaching and learning of literacy and numeracy skills. The large spectrum of ICTs, which can be applied to different contexts, includes satellite systems, network hardware and software as well as videoconferencing and electronic mail. Each one of these technologies opens up new possibilities to develop literacy skills from the safety of one's home and offers a virtually unrestricted access to learning materials (Kim et al., 2012).

The great potential of ICTs for learning is also challenged by limitations. Especially for the older generation it is difficult to catch up with ICT skills, which is why they are at risk to be left behind. In addition, a lack of literacy skills is often connected to poverty, which may restrict access to and the efficient use of those technologies. Meanwhile, despite growing use of mobile phones and personal computers, access to the internet is restricted in many parts of the world. For example, in Kenya about 72% of the population own a mobile phone but only around 32% are internet users (UNICEF, 2012). The challenges of using mobile learning to accomplish Education for All (EFA) goals and of mainstreaming mobile learning include building strong multi-sector partnerships to foster widespread uptake, linking mobile analytics to learning theory, training teachers in mobile learning design and promoting mobile learning for all (UNESCO, 2013).

After television, radio is the mass communication technology that reaches the widest audience throughout the globe. It is a low-cost but powerful tool, especially for reaching vulnerable populations in remote areas. This compilation includes case studies from Cape Verde, Panama, Solomon Islands and Somalia as examples of how radio helps to preserve local cultures and languages while contributing to global understanding and promoting development, lifelong learning and cultural diversity. At the same time it supports life skills and adult basic educa-

tion programmes. Very often, distant learning supported by ICTs is just a complement to face-to-face teaching. This is for example the case in Mongolia, where the face-to-face teaching strategy is supplemented by a distance learning mode using radio, video-CDs and DVDs. The Same Language Subtitling Programme in India is an example on how millions of newly literate people can be motivated to further develop their reading skills by combining this practice with the consumption of popular culture on TV.

Mobile phones, tablets and personal computers are further extending their reach and offer a high value with regard to literacy teaching and learning, especially when an internet connection is available. Smartphones and tablets are the most recent generation of ICTs, and are outperforming other technologies, because of their independence from landlines and because they provide the opportunity to include interactive learning features. This compilation offers examples from Afghanistan, Brazil, Cambodia, Iraq, Niger, Pakistan, Senegal and the UK. The Cambodian pink phone project is an example for how mobile technology has empowered women leaders at grassroots level to reduce domestic violence incidents in their communities by enabling them to take action in a timely manner. The use of tablets has been successfully piloted in the Amazon rainforest of Colombia offering the learning software in four different indigenous languages in addition to the national language. The many examples of literacy and numeracy practices using web-based learning programmes through computers include literacy programmes from Brazil, Canada, Colombia, Costa Rica, Germany, Ireland, Jamaica, Kenya, Lebanon, and Turkey, from which valuable lessons can be drawn.

The examples of literacy and numeracy programmes included in this compilation confirm that the use of ICTs to support the acquisition and further development of reading, writing and numeracy skills is usually part of broader blended learning strategies. Traditional classroom teaching and learning approaches are complemented by self-directed learning, where learners can practice and progress at their individual pace, at their own time, and in different places. These strategies contain also possibilities for learners to interact with each other and share the learning experience from different places. A number of programmes featured in this selection are enabling learners to connect with each other and exchange information about health, nutrition, religion and other important day-to-day topics or to coordinate their community development activities. These inspiring programmes arose from different cultural backgrounds and are transferable to a variety of contexts.

The adult literacy and numeracy programmes presented in this compilation also show that there are many challenges associated with the introduction and maintenance of ICTs. Often the financial sustainability of such projects is a major issue. One key challenge is to better ensure that programmes acknowledge the realities and limitations of existing infrastructures, as well as the specific social and cultural contexts, in order to support programme ownership and sustainability over time. At the same time the programmes offer creative solutions on how to overcome some of those hurdles. Most countries are still far from a situation that would allow them to make optimal use of ICTs, and the aim of providing effective learning opportunities for everyone, anytime and anywhere is far from being fulfilled. Particularly when the introduction of ICTs such as mobile phones and personal computers into adult learning becomes strongly market-driven, there is a risk of excluding those with lower incomes. Many literacy providers in poor countries struggling with making available minimal levels of services to learners may be questioning the suitability of ICTs for their context.

Furthermore, there are critical voices on how computers transform education, work, and international development in ways that are ecologically unsustainable. While many people interpret digital technologies as beneficial and culturally neutral, some scholars have drawn attention to how they reinforce problematic assumptions of the «modern world» (Bowers, C.A., 2014). Therefore, it is crucial to develop educational strategies that will contribute to more critical and informed citizens and a public debate about the uses and risks of digital technologies.

The recent ICT development, particularly with regard to smartphone technologies, has led to high expectations for the future. However until now there is not enough evidence to show that mobile technology truly leads to a better learning success (Kim et al., 2012). Due to the unpredictability of mobile learning, it can be difficult to gather data on the impact of mobile learning projects (Vavoula and Sharples, 2009). While our knowledge of learning has improved significantly thanks to progress in cognitive research, research into the effect of ICT interventions on the learning process is nearly non-existent. In addition, available research on the effectiveness of ICTs often seems to be contradictory, difficult to interpret, and hard to apply to policy. Even though research-based evidence on the improvement of adult literacy skills through the use of ICTs is still limited, this compilation offers promising examples showing that ICT can be creatively used to supplement face-to-face adult literacy teaching and can be applied to gain and

maintain literacy skills on a higher level (Chudgar, 2014).

Fascinating and exciting new technologies, software and applications are appearing almost on a daily basis. However, exploiting the potential of ICTs can never be an end in itself. Technologies are only tools, if powerful ones. They have the potential to contribute to effective teaching and learning literacy and numeracy: enhancing access and outreach, motivating learners to engage or re-engage in learning, improving the quality of teaching and learning, and boosting the possibilities for life-long learning. However, in order to make effective use of the potential of ICTs, many difficulties have to be overcome and some prerequisites must be met. These cover a wide spectrum including education policies and strategies; physical, hardware, and software infrastructures; human and financial resources; implementation modalities; and teaching and learning contents and methodologies.

The experiences documented in this publication show that the practice of effectively integrating ICTs into the teaching and learning of literacy and numeracy is not a simple one-step process. It involves a series of deliberate decisions, preparatory actions, creativity and pilot testing. It requires careful analysis of which educational objectives can be supported by ICTs; which ICTs are the most appropriate with regard to learners' and teachers' motivations and capacities, context realities and development prospects; and which investment in the necessary human, physical and instructional infrastructures is necessary and sustainable over time. Innovations require deliberate effort and commitment, a solid base of knowledge, consultation of stakeholders and participatory development processes, testing of different options, planning for large-scale implementation, and openness to self-critical assessment, modification and adjustment. A prudent step-by-step incremental approach, succeeded in time by a comprehensive strategic approach, has proven to be the most effective.

A successful approach to introducing ICTs in the teaching and learning of literacy and numeracy recognizes the central role of facilitators, educators or teachers who do not only need to be convinced of the benefits of ICTs and sufficiently trained in its pedagogical use, but also should be actively involved in the early stages of planning and developing such learning systems. Action research will then turn such experimental projects and piloting into productive learning experiences. It will also contribute to quality assurance and the creation of a solid knowledge base. This may encourage further investment in new

technologies that address the learning needs of marginalised population groups, and are both sustainable and cost-effective.

All literacy programmes selected to be featured in this publication contain valuable experiences and lessons to share. More examples of innovative literacy programmes can be found on UNESCO's Effective Literacy and Numeracy Practices Database (LitBase) at www.unesco.org/uii/litbase, which is a continuously developing database of successful adult literacy programmes.

Ulrike Hanemann

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Distance Learning for Adults: Radio ECCA



COUNTRY PROFILE

Population

519,000 (2006 estimate)

Official Language

Portuguese

Internet Users per 1000 Inhabitants

35 (2002)

Households Possessing a Radio Receiver

66% (2002)

Access to Primary Education – Total Net Intake Rate (NIR)

87.8% (2005)

Total Youth Literacy Rate (15–24 years)

96% (1995-2004)

Adult Literacy Rate (1995-2004)

Total: 81%, Male: 88%, Female: 76%

PROGRAMME OVERVIEW

Programme Title

Distance Learning for Adults: Radio ECCA Project for Socio-Economic Development

Language of Instruction

Portuguese

Programme Partners

Government of Cape Verde, Spanish Agency for International Cooperation, Regional Government of the Canary Islands

Date of Inception

2002

CONTEXT AND BACKGROUND

Cape Verde is an archipelago consisting of ten islands. Although primary education is mandatory for children between 6 and 14 years and free



for those between 6 and 12 years, access to education is still a major challenge for most people due to poverty and low educational investment, including investment in workpower and school development. Adult distance learning and the use of information and communication technologies in learning is therefore regarded as a vital means of increasing people's access to education. Distance education is also officially recognised by law as a means of reducing geographical/regional disparities and promoting equality of opportunities in education and training for all young people and adults as well as a vehicle for promoting national development. The Law of Foundations of the Education System of Cape Verde establishes distance education as a special modality of education, which «shall complement recurrent and continuing education». The law also stipulates that learning achievements gained through distance education should be recognised as equivalent to those gained through the formal education system.

The pilot phase of the distance learning programme for youth and adults based on the Adult Distance Learning (ECCA System) began in 1999 with financial and technical support from the Government of Cape Verde, the Regional Government of the Canary Islands and the Spanish Agency for International Cooperation. Since then, the programme has evolved and expanded in different phases. Between 2002 and 2005, the «Adult Distance Learning (ECCA

System) for the Economic Development of Cape Verde» project was launched and implemented. This was followed by the launch of the educational radio service programme in 2003, which is still operational (see: <http://www.radioecca.org/>).

In addition, a third phase (2006–2011) of the adult distance education programme was implemented. The principal goal of the Adult Distance Learning programme (ECCA System) is to support the National Programme of Adult Education and Training, which combines distance education with adult basic education, secondary education, and vocational education and training, as well as community learning for development.

PROGRAMME

The second programme phase (2006–2011), Training for the Design and Implementation of an Integrated Adult Distance Learning and Training System (ECCA System) for the Economic Development of Cape Verde and Related Curricular Design, is an expanded follow-up of the 2002–2005 version. The programme is intended to enable all out-of-school youth and adults to access education, regardless of their literacy skills or levels of formal education and economic status.



OBJECTIVES

The general goal of the programme is to set up a national training system for out-of-school youths and adults that is based on distance learning and uses radio communication and other ICTs as a means of learning. At the same time, curriculum and learning materials should be designed in order to improve the current face-to-face teaching system. Therefore, the specific objectives of the programme are to:

- ✎ design a new national curriculum of distance learning and related learning materials for learners at different literacy levels and/or stages of educational training;
- ✎ train Cape Verdean professionals in both the development of curricular design and in the development, design, reproduction and recording of teaching materials;
- ✎ develop training activities with the ECCA Distance Learning Radio System to ensure equal opportunities in terms of access to education and to the world of work; and
- ✎ adopt the ECCA Distance Learning System, thereby providing the Directorate of Literacy and Adult Education (DGAEA) with an educational radio service and related equipment designed to improve the quality and outreach of the educational radio station network, increase Internet radio broadcasting and enable access to suitable computer equipment.

APPROACHES AND METHODOLOGIES

Training of Professionals in the Distance Learning System

Members of the Ministry of Education's technical staff are being given intensive training in the use of the ECCA Distance Learning System in order to enable them to perform the different functions and tasks related to its implementation. One of the tasks is the development of an Integral System of Adult Education and Training, based on a renewed and expanded vision of education and training. It is an integral, plural, open and flexible system intended to train youth, adults and their communities. It recognises the prior learning and life experiences that adults have already gained and sees the training of adults as a competency-based process of lifelong learning. It lays the foundations for a national system of recognition, validation and certification for the competencies that adults have acquired through formal, non-formal and informal channels.

A first version of a competency-based and modular Curricular Design for Adult Education and Training is being prepared. Instead of individual subjects, the curriculum focuses on four main areas (communication, knowledge, citizenship and employment) in order to develop four key competencies, 22 skills and 180 items for evaluation. Most of the thematic areas support the development of the tourist industry and

some are related to food, languages (English, Spanish and French), sales and customer services, receptionist duties, leisure and entertainment, tourist guide activities, environmental education, community development and computer programmes, among others. The innovative feature of this new curricular design is the inclusion of distance learning; a methodology which strengthens the activities carried out so far by the DGAEA.

A further project activity consists of conducting a technical study for the creation of a nation-wide educational radio service to provide equipment to radio studios. In addition, there are plans to install seven radio stations and distribute computers with Internet access to nine adult education and training centres during the «embryonic» stage of the digital literacy project. Furthermore, the DGAEA will be equipped with printing facilities to enable support materials to be produced autonomously. A telecommunications centre will be installed to improve internal and external communication. A webpage and a virtual collaborative environment will help learners and facilitators communicate and exchange information. The project is aimed at transferring the ECCA Adult Distance Learning System technologies to the DGAEA in order to help it implement the national adult education and training system.

Methods of Distance Learning and Teaching

The ECCA Distance Learning System is based on the synchronised use of three elements: print materials, radio classes and orientation tutorials:

- ✎ The print materials comprise all the information required to follow the course. These include questionnaires, charts, exercises and evaluations which accompany, complement and build on the contents of the radio classes. Additional support materials include video, audio, and CD-ROM materials.
- ✎ Each radio class includes a precise and active explanation of the content of the print materials which the learners complete following the instructions given to them by the educator. Each class usually lasts 30 minutes and provides information on the topic of the day.
- ✎ The orientation tutorials complement the print materials and radio classes and are intended to facilitate contact between learners and educators. This contact can be set up face-to-face or from a distance (by telephone or via a telematic system) and enables system-related feedback to be generated.

PROGRAMME IMPACT AND ACHIEVEMENTS

- ✎ To date, 25 courses have been developed and more than 20,000 certificates have been issued to youths and adults who have been empowered to enter the job market as semi-professionals.
- ✎ Distance education based on the use of new ICTs expands learners' opportunities for work-based, advanced vocational training.
- ✎ Innovative pedagogical approaches allow for learning experiences which are tailored to participants' characteristics, learning needs and specific vocational activities.

LESSONS LEARNED

- ✎ Distance learning based on ICTs constitutes an ideal solution for Cape Verde which – due to its geographic situation and state of economic development – is on its way to becoming a «knowledge society». The education system is under great pressure to provide quality education and training based on new technologies that are tailored to meet the challenges of socio-economic development with a particular emphasis on the tourist industry.
- ✎ Distance learning based on ICTs will be more successful if it is implemented as a national education and training system in the context of a favourable education policy.
- ✎ The ICTs must be viable and adapted to the needs of the country and the context in order to provide sustainable solutions that are able to support the achievement of both national education targets and the UN Millennium Development Goals.
- ✎ The educational radio system is better adapted to the context of African countries. This is proven by the results of experiences with the ECCA System in the Canary Islands, Cabo Verde, Morocco and Mauritania.

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KENYA

Empowering Self-help Groups through ICT for Better Education

COUNTRY PROFILE

Population

43,924,000 (2013)

Official languages

English, Swahili

Poverty (Poverty headcount ratio at USD 2 PPP a day)

67.2% (2011)

Total Expenditure on Education as % of GNP

6.7 (2011)

Net Enrolment Rate Primary Education

82% (2009)

Youth Literacy Rate (15-24 years, 2011)

Total: 82%, Male: 83%, Female: 82%

Adult Literacy Rate (15 years and over, 2011)

Total: 72% (2011), Male: 78%, Female: 67%

PROGRAMME OVERVIEW

Programme Title

Empowering Self-Help Groups in Kenya Through ICT for Better Education and Alternative Livelihood Activities

Implementing Organisations

Coastal Ocean Research and Development in the Indian Ocean (CORDIO East Africa) (NGO), Avallain Ltd. Kenya

Language of Instruction

English and Kiswahili

Date of Inception

initial work started in 2007, online learning material was launched in May 2010

Programme Partners

Avallain Switzerland, Coastal Oceans Research and Development-Indian Ocean (CORDIO) and Suganthi Devadsason Marine Research Institute (SDMRI)

CONTEXT AND BACKGROUND

Although, with a GDP of USD 44.10 billion, Kenya has the largest economy in South-East and Central Africa (World Bank, 2013), 67.2% of its population lives on less than USD 2 per day (UIS, 2011).

The Education For All (EFA) Global Monitoring Report notes that Kenya is among the countries furthest away from achieving the 96% target for adult literacy by 2015. Instead, an adult literacy rate of 78% is projected (UNESCO, 2014), representing a 6% improvement since 2011. Despite increasing the proportion of GNP spent on education by 2% since 1999, the total government budget for education fell by approximately 8% between 1999 and 2011.

Although some progress has been made, it has not always reached the poorest and most marginalized parts of the population. Children from wealthier backgrounds have a far better chance of enrolling at school and gaining basic literacy and numeracy skills. In 2003, primary school fees were abolished, contributing to an expansion in access to primary education. Yet, despite this, only 75% of children in Kenya graduate from grade 4, of whom around 70% are able to read (numbers that nevertheless compare favourably to other sub-Saharan African countries). Behind these figures are significant discrepancies in achievement. The youth literacy rate for the poorest Kenyans is around 70%, compared to 90% for the richest. The issue is compounded by gender discrimination, particularly in the poorest households, with 6% fewer girls completing primary education than boys. Almost two-thirds (61%) of all illiterate adults in Kenya are women.

Poor teacher training is likely to be a contributing factor limiting progress in education. A recent report on school quality highlighted the fact that teachers receive little training and, therefore, do not fully master their subjects (Ngware et al., 2010).

Kenya faces not only important social challenges but also significant environmental threats, concerning poorer people's reliance on water and land resources, which are related to the country's high poverty rate. The Empowering Self-Help Groups in Kenya through ICT for Better Education and Alternative Livelihood Activities programme aims to address these challenges through the promotion of alternative liveli-



hood activities. The programme uses an e-learning tool focused on environmental issues, combining this with training in literacy, language and numeracy, as well as in computer skills, including information and communication technologies (ICTs).

PROGRAMME OVERVIEW

The collaboration between CORDIO and Avallain began in 2009. CORDIO aims to teach coastal communities how to preserve marine environments and, to that end, delivers community training programmes with a focus on literacy and the environment. The training is supported by engaging and easy-to-access learning materials provided in the form of interactive e-learning activities. These activ-

ities cover a diverse range of subject matter, beginning with basic literacy, and focus on the learner's needs rather than the technology, which is tailored to users with limited experience of formal learning.

Avallain is a social enterprise based in Switzerland. It supports the work of educators through e-learning and e-publishing, helping them make the best use of ICTS and the internet in learning and viewing these as tools for inclusion rather than the cause of further division. Avallain produces customized learning platforms with interactive self-learning and tutor-guided content, not only for schools, but also for home study and in tertiary education. With a daughter company in Kenya, it has a strong record of supporting educational opportunity in the country

and directs some of its profits to projects in Kenya. This track record meant that there was potential for intensive local collaboration with CORDIO and made possible the Empowering Self-Help Groups in Kenya through ICT for Better Education and Alternative Livelihood Activities programme.

Aims and Objectives

The main objective of the programme is to promote alternative livelihood activities and build the capacity of communities to improve their socio-economic situation. It aims to achieve this by:

- ✎ Improving literacy and numeracy skills;
- ✎ Improving computer and language skills;
- ✎ Improving livelihoods in local settings in Kenya;
- ✎ Creating awareness on the need for ICTs;
- ✎ Empowering group work; and
- ✎ Contributing to coastal and marine research, conservation and management.

PROGRAMME IMPLEMENTATION

The programme aims to promote sustainable development through education and by empowering self-help groups in some of the poorest parts of Kenya. Uniquely, it combines learning about environmental issues with basic and ICT skills training to foster both employability and sustainable development.

ICT skills are not taught in isolation. Instead, the programme takes an integrated approach, relating the use of ICTs to the day-to-day lives of participants, by focusing on topics such as fishery, tourism and environmental issues affecting the east African coast. This approach is made possible by the use of «Avallain Author» software, a system for the creation of interactive e-learning content on diverse subject matters, beginning with basic literacy. It gives users the opportunity to adapt simulated case studies so that they are as practically relevant as possible, using paper forms and real-life situations that learners must resolve.

The programme uses XO laptops, known from the «One laptop per child» campaign, and provided by Avallain. The laptops are designed and built especially for learners living in isolated environments in developing countries, and are a potent learning tool.

TEACHING AND LEARNING: APPROACHES AND METHODOLOGIES

The programme uses storytelling, with integrated tasks, to engage participants. The learner must vir-

tually guide a fictional person through a number of stages in order to find a solution to their problem. This will involve filling out forms on behalf of the character in the story and developing strategies for problem-solving. The stories which provide the context for the learning reflect issues people in Kenya are likely to face on a daily basis, for example, the case below, in which a person wants to register for a local telecommunication service. The learner's role is to virtually guide them through the whole process.

The character in this story is called Saumu. Saumu is a local fisherman who wants to register for a service – called Mpesa – through which he can receive and pay money via his mobile phone. The illustration shows how learners undertaking this task must, first of all, understand the terms and the conditions of the service.

Once they have done this, participants learn how to fill out an online form with Saumu's personal data, highlighting the relevant information and dragging it into the correct box, as shown here. After submitting the form, the learners must answer a number of questions, via audio files, from a telecommunication agent, before Saumu is finally registered with the service.

By presenting the learning in this way, Avallain aims to ensure its relevance to the day-to-day lives of learners. Using this tool, facilitators are able to engage group members in actively discussing and finding solutions to their own problems. As they do so they will also, through use of the laptops and the e-learning platform, improve their ICT skills and increase their familiarity with computer technology. The story is presented not only in text form but also as an audio track, which is particularly useful for learners who have reading difficulties.

The programme uses the Swedish «study circle» model of participatory learning to engage, motivate and empower participants, giving them an opportunity to identify their own learning needs and build on their own interests.

Alternative Livelihood Activities

The «alternative livelihood» activities covered in the programme include the conservation of natural and exotic forest, beekeeping, and the supply of seedlings to nearby schools for planting. Participants have also become involved in growing fruits and vegetables, goat and poultry keeping, and small-scale businesses. One group is engaged in making

aloe vera and neem soap, another in coconut oil and cashew nut processing.

An Integrated Approach

The programme has a number of key phases which combine its three main components: alternative livelihoods, ICTs and education.

The first phase, critical to the programme's integrated approach, involves identifying suitable activities, reflecting the day-to-day lives of participants. This involves considering cultural factors, environmental issues, sustainability, and the market for products and services, on a project-by-project basis, depending on the needs of each community. CORDIO makes use of previous examples of good practice and current research from similar institutions, relevant government departments and other stakeholders in assessing what would work best for the community in question. Internet access and the availability of technology varies from place to place and is another issue to consider in determining how ICTs can support socio-economic change in communities. The study-circle model, linked to existing adult education systems, was useful in promoting this more interactive way learning and in empowering the local community. Follow-up sessions help the self-help groups to maintain their livelihood activities and support the ongoing use of ICTs in these activities.

Programme Content

The programme's e-learning platform focuses on four main areas – , literacy, numeracy, English language training and environmental issues – reflecting the educational needs of the local community. At each meeting the study group discusses subjects relevant to their social, economic and political development, as well as priority topics such as book-keeping, agriculture and business.

The content used in the Avallain Author software was developed by Avallain's teams in Switzerland and Kenya, with input from CORDIO and Kenya's Ministry of Education.

Recruitment and Training of Facilitators

The programme's facilitators are field workers, hired through CORDIO. They receive training in the use of OX laptops before they begin to facilitate and guide the participants in the use of the e-learning tool. Each self-help group additionally nominates two members who receive training and are expected to

pass on their knowledge to other members of the group.

Enrolment and Training of Learners

The self-help groups set up as a result of the programme were formed by people who want to empower themselves and their communities and to improve local socio-economic conditions. For that reason, some of the groups are self-financing. Although some fishermen have engaged in the programme, the participants are mostly women, who are trained in the use of ICTs, shown how to operate basic computer packages and provided with computers and (limited) internet connectivity. There are currently 10 women's self-help groups, spread across five villages in Kenya. In total, they have 285 members, though there is, as yet, no umbrella structure to help them coordinate or share information.

MONITORING AND EVALUATION

At the beginning of the programme three workshops were held to evaluate the participants' reaction to the new way of learning. The results showed that learners enjoyed using the new tools and the interactive content.

Further evaluations of the study-circle approach used in the programme have been conducted, highlighting its contribution to the empowerment of individuals and communities. The strongest narratives to emerge from these studies concerned women who, for the first time, could sign their name on a document, count their own money or use a computer to access the Internet.

IMPACT AND ACHIEVEMENTS

The programme is also being implemented in India in collaboration with the Suganthi Devadason Marine Research Institute. Because the Indian programme has been operating for longer it is a useful resource for CORDIO's implementation of the programme in Kenya. In both countries, previously illiterate women are now able to read and write basic sentences and sign their names instead of using thumb impressions as a result of the programme.

The programme is also having a positive impact on the employability of participants, equipping them with qualifications (in literacy, numeracy, ICT and language skills), which can help them find work in sectors such as tourism or administration. The training participants receive also gives them the means to better access market opportunities, to generate



income, to communicate among themselves or with stakeholders, and to manage data.

The programme's activities have also enhanced understanding and strengthened relationships among women, fishermen, the local administration, social service officers and project teams, promoting alternative livelihood opportunities which reduce dependency on Kenya's coastal resources.

Testimonials

You can use the computer to record the meetings and also to keep records of our sales. If one gets KSh1,000 for coconut oil and another something else we can use it for easy calculations. Study circle participant

By using ICT when they are having a discussion on a particular topic they can find information. For example if they are talking about a particular crop they can use the ICT to find more information about that particular crop, to benefit and get access to more information. CORDIO EA Staff

It helps the whole community as the study circle spreads the information to the rest of the community. Government officer

CHALLENGES

The programme's impact is, to an extent, dependent on the social, economic and technological limitations which provide the context for the work. Limited technical capacity, in particular an inadequate infrastructure to support ICT implementation, is a problem facing many groups. Some are obliged to share existing telecentres. Securing an adequate supply of electricity for their centres also occupies group members, taking more time away from training. Another factor limiting impact concerns the accessibility of the technology. Some older women struggle to use ICTs effectively because of failing eyesight. There is a need for more laptops with bigger screens. Low awareness of educational need and poor governance are other factors affecting access to training.

LESSONS LEARNED

Participants prefer laptops to PCs because they allow them to meet as they traditionally would, sat in a circle rather than in a typical classroom environment. Mixing tradition with technology in this way helps break down barriers between the two worlds and encourages acceptance of technology as a tool for learning. The use of interactive content

and the high-quality learning material that the laptops support also help keep the learners motivated and engaged.

The XO laptops are popular among the groups because of their portability and long battery life. Their relatively lower cost (approximately USD 200 per unit) means that more people have the opportunity to access computer facilities, even when electricity is not immediately available.

Some of the more cost-intensive livelihood activities set up over the course of the programme could not be maintained due to a lack of funds and other external conditions. An investment in mobile payphones, for example, was rendered obsolete within six months by the introduction of low-unit phone credit by service providers, which made it possible for people to top up their own phones. In the third year, the introduction of Kenya's first under-sea fibre-optic cable improved bandwidth and made it cheaper to access the internet and use a mobile phone, thus opening up new opportunities. Adapting to continuous change is an ongoing challenge for the programme, demonstrating the importance of clear project objectives which can survive even when the changing external environment renders certain technologies obsolete.

SUSTAINABILITY

The high poverty rate in Kenya means that assuring the long-term sustainability of the programme is a challenge, requiring the sourcing of diverse forms of financial support. The diversity of CORDIO's work means that it has been able to cultivate a wide range of donors, from major multi-country programmes to small site-based activities. These provide financial backing crucial to the programme's long-term survival. The success of the programme has encouraged CORDIO to expand and include other Kenyan villages in the programme.

Exchange visits between programme providers in Kenya and India is helping improve quality through a regular exchange of experiences. The visits provide the teams with opportunities to share their experiences of group activities and to plan for the next phases of the project, based on what they have learned. Greater use of tools such as text messaging, email, and the internet are being encouraged to improve communication within the project. The next step is to encourage communication between self-help groups, using social networking as a means of sharing experiences between group members of both countries. This will make it easier both to mar-

ket group products and to access internet-based services.

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Alphabétisation de Base par Cellulaire (ABC): Mobiles 4 Literacy

COUNTRY PROFILE

Population

16.5 million (2011, UNESCO)

Official language

French

Other languages

Hausa, Zarma & Songhai, Tamajeq, Fulfulde, Kanuri, colloquial Arabic, Gurma and Toubu

Poverty (population living on less than USD 1.25 per day)

44% (2011, UNICEF)

Total expenditure on education as % of GDP

4.5% (2011, UNESCO)

Primary school net enrolment ratio (%) 2008–2011

58% (2011, UNICEF)

Youth literacy rate (15–24 years, 2007–2011)

Total: 37%, Male: 52%, Female: 23%

Adult literacy rate (15 years and over)

Male: 43% (2005–2010), Female: 15% (2005–2010)

Statistical Sources

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PROGRAMME KEY INFORMATION

Programme title

Alphabétisation de Base par Cellulaire (ABC) :
Mobiles 4 Literacy

Implementing organization

Catholic Relief Services

Language of instruction

All classes were taught in the native language of the community, either Zarma or Hausa

Date of inception

2008

Programme partners

Tufts University, Oxford University, UC-Davis

Funding

Catholic Relief Services, Tufts University, Hitachi Foundation, CITRIS and private donors

Annual programme costs

approximately USD 175,000

Annual programme cost per learner

USD 25

COUNTRY CONTEXT AND BACKGROUND

Niger is a country stricken by poverty. It is ranked bottom of the United Nations' Human Development Index (HDI), a comparative measure of life expectancy, literacy, education, standards of living and quality of life in countries worldwide. Although the government has increased education spending by almost 2% since 1999, Niger still has one of the world's largest populations of out-of-school children. Compulsory education lasts six years, yet more than 50% of Nigerien children who should be in grade 5 are not going to school, while nearly 75% of young people spend only four years at school. Those who do attend primary school often emerge with few or no basic literacy skills, perhaps because only 17% of teachers in Niger are properly trained (UNESCO 2014). If current trends continue, Niger would achieve universal primary education only in 2070 (ibid.).

Women in Niger fare significantly worse than men when it comes to literacy, with 30 per cent fewer literate women than men and less than a quarter of young women achieving basic standards of literacy. Gender inequality is also reflected in the recruitment of teachers: only 18% of teachers in upper-secondary school are women.



Internet access is a huge challenge in Niger, due to limited financial resources and poor infrastructure. Only one person in every 100 is estimated to use the internet (UNICEF 2011). In contrast, 27 out of 100 people in Niger own a mobile phone with the number of users growing fast thanks to the expansion of cell phone coverage in the country (ibid.).

The desire to learn how to make a call or write an SMS text message, a cheap and increasingly popular means of communication in Niger, has proved an important factor in motivating illiterate adults to learn numbers and letters. For that reason, the ABC project has used the mobile phone as a simple and low-cost pedagogical tool to encourage adults to engage in literacy learning and to enable them to practise their skills not only in the classroom, but outside too – a significant challenge for most adult literacy programmes.

PROGRAMME OVERVIEW

The ABC programme is a collaborative initiative that uses mobile phones as tools in promoting adult literacy and numeracy in Niger. The programme stemmed from the observations of researchers at Tufts University and Catholic Relief Services, who

noticed previously illiterate traders teaching themselves to read and write using a mobile phone, in order to take advantage of SMS text messaging, as a cheaper alternative to calling. The programme was designed to assess the impact of mobile phone use on adults' learning and socio-economic outcomes. It integrated phone-based literacy and numeracy modules into a conventional adult literacy course, attended by 50 learners (25 men and 25 women) in each of the 113 villages selected in the Dosso and Zinder regions of Niger. All students followed a regular adult education programme. However, in half the villages (the «ABC villages») participants also learned how to use a mobile phone.

Aims and Objectives

- ☞ To teach learners how to use a simple mobile phone, including turning the phone on and off, recognizing numbers and letters on the handset, making and receiving calls, and writing and reading SMS messages;
- ☞ To improve adults' reading, writing and numeracy skills, to enable them to better function in daily life;
- ☞ To introduce the use of information and com-

munications technology as an educational tool within the classroom;

- ✎ To enable students to practise their newly acquired literacy skills outside the classroom using mobile phones;
- ✎ To improve the economic prospects of Nigerien households, by giving participants the means to search for price information, in order to sell their crops at a higher price, or to search for information on labour market opportunities; and
- ✎ To ensure adult learners are more prepared and better informed when making decisions about business, health, and other household matters.

PROGRAMME IMPLEMENTATION

Using the Ministry of Non-Formal Education’s adult education curriculum, the course taught students how to read and write in their native languages (Hausa and Zarma), and how to solve simple math problems. In addition, they learned about agricultural, environmental and health issues. The adult education modules involved daily lectures, repetition, practice and exercises.

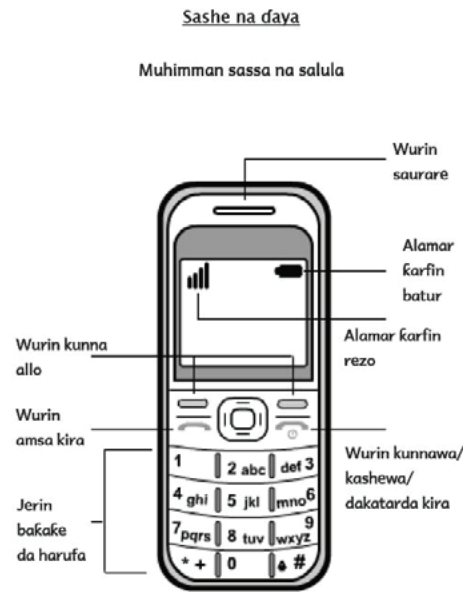
The adult education programme comprised eight months of literacy and numeracy instruction over a two-year period. Students attended classes five times a week, for three hours a day.

Courses started in February and continued until June, with a seven-month break in between each year of study, due to the planting and harvesting season. Prevailing socio-cultural practices in Niger meant that each village had two literacy classes, one for men and one for women.

Some two months into the programme, students in the selected villages began the ABC module. The module gave learners basic instruction on how to use a mobile phone, including turning the handset on and off, making and receiving calls, and sending and receiving text messages. As per the Ministry of Non-Formal Education’s curriculum guidelines, the students used learning materials in either the Hausa or Zarma language.

Recruitment and Training of Teachers

Teaching staff were chosen from within the community on the basis of their level of education and were trained by the Ministry of Non-Formal Education in the basic adult education curriculum. Catholic Relief Services and Tufts taught the literacy teachers the basis of the ABC methodology. Teachers earned a salary of around 40,000 CFA francs (USD 80) each month. In order to ensure the engagement of the



teachers, they chose the classroom schedule in collaboration with members of the community.

Enrolment of Learners

There were a number of criteria for student eligibility. Students had to be members of a producers’ association within the village. They had to be unable to read or write letters or numbers in any language. And they had to be willing to participate in the programme. If more than 50 people were eligible in any one village, the students were chosen by public lottery.

All students undertook an initial baseline assessment, conducted by Tufts University using tests devised by the Ministry of Non-Formal Education. They were assigned scores between 0 to 7, with level 0 corresponding to ‘complete illiteracy’ (that is to say, not being able to recognize or write any letters of the alphabet), and level 7 applying to students able to write two complete sentences with more complex word patterns. The levels correspond to those used in the numeracy test, which ranged from level 0 (‘complete innumeracy’) to level 1 (simple number recognition), up to a maximum of level 7 (number problems involving addition, subtraction, multiplication and division). Almost all students were assessed at either level 0 or 1.

MONITORING AND EVALUATION OF THE PROGRAMME

In order to compare literacy and numeracy test scores between the villages that had mobile phones and those that did not, several rounds of literacy and



numeracy tests were conducted by Tufts University, using the Ministry's test materials. The first round of data collection was conducted by Tufts in January of each year of the programme, generating information about learners' literacy and numeracy levels prior to starting classes. A second test was carried out at the end of the course, by Tufts and the ministry, in order to measure the immediate impacts of the programme. A third, conducted by Tufts during the following January, sought to determine whether the acquired literacy and numeracy skills had endured over time.

Tufts' research also involved a household survey, with interviews conducted at 1,038 student households across 100 villages over a three-year period. The purpose was to obtain information about household demographics, assets, production and sales activities, access to price information, migration and mobile phone ownership and usage, before, during and after the programme.

Tufts University also collected monitoring data from Catholic Relief Services and the Ministry on teachers' characteristics and engagement and students' enrolment and attendance.

PROGRAMME IMPACT AND CHALLENGES

Between 2009 and 2012, Catholic Relief Services' adult education programme engaged 7,000 people with literacy problems. Examining changes to reading and writing and maths scores over time, students, overall, increased their test scores from 0 to, on average, between 2 and 3, meaning that they could read and write sentences and complete addition and subtraction problems. However, the writing and maths test scores of ABC villages were between 20% and 25% higher than those of non-ABC villages in the short-term, and 20% higher in the longer-term (that is, seven months after the end of the programme). Although both groups experienced a decline in literacy and numeracy skills during the

six months when classes were not held, the level of depreciation was lower in ABC villages.

Almost a third (31%) of adults in traditional literacy programmes in Niger achieve level 1 in maths or writing during the first year of literacy classes, whereas 36% of adults in the ABC programme achieved level 1 after only six weeks of using a mobile phone. The traditional programme cost is USD 21.50 per student, compared to the ABC programme cost of USD 27.5 per adult participant. These figures, of course, prompt the question: Does the ABC programme promote more adults to level 1 per dollar than the traditional literacy programme? During the first year, for every US dollar spent on the ABC programme, approximately 80% of the students reached level 1, compared to 69% of students on conventional literacy programmes.

PROGRAMME CHALLENGES

The programme faced a number of challenges, including an unpredictable funding environment, problems with logistics, and drought. Funding issues caused delays to the programme, which reduced the amount of contact time between teachers and students. A devastating drought in 2009 meant that fewer students were able to attend the course in 2010. And poor monitoring meant that shared mobiles phones were not used, as had been planned.

LESSONS LEARNED

In conventional adult literacy courses, learners often find it difficult to put into practice what they have learned, principally because of a lack of recent and relevant information in their local languages. However, the use of mobile phones gives learners the opportunity to practice their literacy and numeracy skills more regularly outside the classroom. SMS text-messaging is a simple and low-cost means of communication, which allows learners not only to communicate news of events but also to have regular conversations with family, friends and commercial contacts. The relative cheapness of SMS, compared to making calls, may have important unintended benefits in poorer communities where illiteracy is most prevalent and where cheap SMS rates can prove a powerful financial incentive to learn to read and write text messages.

The use of mobile technology inside the classroom has motivated both teachers and learners, as it allows individuals and their families to use the technology for other purposes, for example to obtain market prices or labour market information (Aker and Mbiti 2010). The results also suggest that

better-educated teachers are better able to harness mobile technology to improve students' educational experiences, suggesting that teacher quality is essential. Moreover, since mobile phones were supplied for the purposes of the programme, they would not need to be purchased for future projects, which would substantially lower the cost of the programme.

Although, as mentioned above, government expenditure on education in Niger has improved, it remains one of the lowest in the world. Consequently, the use of mobile phone technology in adult education programmes is one of many educational interventions competing for scarce public resources.

SUSTAINABILITY

Despite a lack of funding, the ABC programme has spread to more than 400 villages in Niger over the past three years, thanks to support from USAID's *Food for Peace* programme. The ABC programme has also proved an inspiration to other projects, for example CellEd (<http://www.celled.org/>), a mobile phone-based education platform working with ESL (English as a Second Language) learners in the United States.

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Literacy Project for Girls and Women using ICTs

COUNTRY PROFILE

Population

13,454,000 (2013)

Official language

French

Local languages

Wolof, Peul, Serer, Mandinka, Soninke, Diola and Manjaque

Poverty (population living on less than USD 1.25 per day)

30% (2011)

Total expenditure on education as % of GDP

5.7% (2010)

Access to primary education – total net intake rate

56% (2007)

Youth literacy rate (15–24 years)

Total: 65% (2009), Male: 74% (2009), Female: 56% (2009)

Adult literacy rate (15 years and over):

Total: 50% (2009), Male: 62% (2009), Female: 39% (2009)

Sources

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PROGRAMME KEY INFORMATION

Programme Title

Projet d'Alphabétisation des Jeunes Filles et Jeunes Femmes avec les Technologies de l'Information (PAJEF)

Implementing organization

UNESCO Office in Dakar

Languages of instruction

Pular, Wolof, Mandinka and French

Funding

UNESCO, Proctor & Gamble

Programme partners

Institutional: Ministry of Education, Directorate

in charge of Literacy and National Languages (La Direction de l'Alphabétisation et des langues nationales, DALN), National Centre for Educational Resources (Le Centre National de Ressources Educationnelles, CNRE), Directorate for School Radio and TV (La Direction de la Radio Télévision Scolaire, DRTS); Civil society: National Coalition for Alternative and Popular Education (Le Collectif National d'Éducation Alternative et Populaire, CNEAP), National Coordination of Literacy Providers in Senegal (La Coordination Nationale des Opérateurs en alphabétisation, CNOAS)

Date of inception

January 2012

Annual programme costs

USD 484,000 (USD 1,000,000 for two-year implementation)

COUNTRY CONTEXT AND BACKGROUND

Senegal is ranked 117th out of 127 countries in the Education for All Development Index (UNESCO, 2012). It is unlikely to meet all of its Education for All (EFA) goals by 2015, despite already achieving some of those goals, namely on gender parity in education and the enrolment of girls in primary education. Despite investing around 4% of GDP in education and achieving close to 100% access to primary education, retention continues to be a problem, resulting in a completion rate of just 51% (UNESCO, 2012). There are fundamental problems behind these figures, as shown in the 2013 Human Development Report, which places Senegal 154th out of 187 countries (UNDP, 2013).

Illiteracy is a major problem in Senegal, particularly for women. Fewer than four out of 10 women (39%) in Senegal are considered literate, compared to 62% of men. This means that more than two million Senegalese women lack basic literacy skills (UNESCO, 2012). And the numbers are substantially worse in the poorest parts of the country. Poverty in Senegal is a result not only of very low financial income, but also of a lack of opportunity and capacity to improve one's situation. Improved levels of education significantly increase people's chances of rising out of the lowest levels of poverty. For several

years, alternative forms of literacy education have been used in Senegal, focused on the introduction of basic community schools and functional literacy centres. These institutions are designed primarily for people from disadvantaged groups, such as young people and women who lack formal schooling, enabling them to acquire the literacy skills necessary to continue their education. Classes held at these centres were popular in the early 2000s, but numbers fell sharply when funding was reduced in 2005 (UNESCO, 2007).

Despite two decades of innovation in literacy programmes, it is clear that there remains a need to systematically address the specific issues facing girls and women in Senegal. There are too many young girls at risk of dropping out of school, and too many girls and women with an extremely low level of schooling who are already out of the school system. These problems are compounded by the number of girls and women who are in situations of extreme poverty and vulnerability. Without literacy skills, and, more pertinently, literacy skills relevant to the problems of daily life, this population will only perpetuate the cycle of poverty, deepening social and economic inequality in the country. This is particularly clear in a number of regions in Senegal which report not only very low levels of literacy but also a very significant disparity between the sexes. This is illustrated in table 1.

Measures have been taken to reduce this disparity. Between 2008 and 2015, the Ministry of Education included among its strategic objectives:

- ✎ The elimination of disparities at all levels of education, inside and among regions, socio-economic groups, sexes and urban and rural areas; and
- ✎ The implementation of alternative strategies to promote access and retention of girls in each of the seven levels in the education system: pre-school, elementary, lower secondary, non-formal, upper general secondary, vocational and technical, and tertiary (UNESCO, 2012).

The focus is not only on getting girls into primary education, but on finding ways in which girls and women can access learning, be it formal or non-formal, at every stage of life, regardless of their level of education.

In the past seven years, the use of information and communication technology (ICT) has increased significantly in Senegal. It has been the focus of various projects, including Girls in ICT Day, which has been organised by the Minister of Communication

Table 1: Illiteracy rates in Senegal by region and for women

Region	% of Illiteracy	% of which are women
Matam (North East)	72%	57%
Kédougou (South East)	64%	85%
Diourbel (Centre)	70%	75%
Kolda (South)	58%	84%
Fatick (Centre)	60%	55%
Kaffrine (Centre)	65%	76%

and Digital Economy since 2013, and aims to reduce the wide gender gap in the ICT sector.

Senegal is reported to have the highest internet bandwidth in the Sub-Saharan region, with an above-average use for the continent, both on a household and an individual level (ARTP, 2011). These differences reflect, in part, the popular use of internet cafés in Senegal, which are still regarded as a more affordable option. Active mobile broadband subscriptions are increasing, but figures for 2011 show they are a little lower than the average for the continent (ITU, 2011).

Mobile phone use has risen sharply, from just 30% in 2007 (ITU, 2011) to over 80% in 2012 (ARTP, 2012). Efforts have been made to ensure this extended coverage does not leave behind people living in rural areas.

PROGRAMME OVERVIEW

The Literacy Project for Girls and Women in Senegal (PAJEF) was set up by UNESCO Dakar to improve the literacy skills of girls and women aged between 15 and 55 years and to explore the role ICTs can play in this. Women and girls at various stages of literacy acquisition have participated in the programme, including the newly literate, participants in literacy programmes, and participants in Basic Community School programmes (Écoles Communautaires de Base) and new schools, such as Schools on Street Corners (Écoles coins de rue) and Second Chance

Schools (Écoles de Deuxième Chance). The project's focus is on lifelong learning.

The programme is run as part of the Global Partnership for the Education of Girls and Women, begun by UNESCO and the United Nations Literacy Decade in 2011. The project's aim is to contribute to the goals of Senegal's Ten-Year Education and Training Programme (PDEF2, 2011–2020), particularly those pertaining to the education of women and girls, and literacy and non-formal education.

It also contributes to the Education For All goals, notably goal 4 (achieving a 50 per cent improvement in levels of adult literacy), goal 3 (ensuring that the learning needs of all young people and adults are met) and goal 5 (achieving gender equality in education), as well as the Millennium Development Goals concerning poverty, women's empowerment and maternal mortality.

The programme is overseen by UNESCO Dakar, with specific partners responsible for different aspects of the technical implementation of the project (see Programme Key Information for a full list). The roles played by each of the partners are briefly summarised below:

DALN – the Directorate for Literacy and National Languages in Senegal – works with the Ministry of Education in implementing national literacy policy. As a partner in the PAJEF programme it:

- ☞ oversees the selection and opening of 100 classes for PAJEF;
- ☞ organises the initial and continued training of 100 teachers; and
- ☞ oversees monitoring and evaluation on a centralized level, also coordinating it on a decentralized level.

CNRE – the National Centre for Educational Resources – works closely with the Ministry of Education, including on improving literacy rates. One of its responsibilities is to assure the technical and financial aspects of literacy and non-formal education programmes. Its role in PAJEF includes:

- ☞ the transfer of funds to the seven academic inspectorates for the payment of salaries, the financing of income-generating activities and monitoring; and
- ☞ the continued online training of teachers in the programme.

DRTS – the Directorate for School Radio and Television – also works closely with the Ministry of

Education, not only in the creation of educational programmes, but also in the training of teachers. It is also active in informing the public about educational activities. The DRTS's role in PAJEF is to oversee the production and distribution of the radio and television programmes used in the project.

CNEAP – the National Coalition for Alternative and Popular Education – specialises in action research and the evaluation of educational systems. The coalition promotes alternative education in Senegal, with a particular focus on its most disadvantaged communities. Its role in PAJEF has involved:

- ☞ opening 20 classes for the project in four of the seven regions;
- ☞ paying the salaries and overseeing the training of 20 facilitators;
- ☞ creating pedagogical material for the programme;
- ☞ bringing participants into contact with socio-economic networks;
- ☞ setting up income-generating activities; and
- ☞ creating a literate digital environment.

CNOAS – the National Coordinator of Literacy Providers in Senegal – is a non-profit association set up in 1995. It works closely with the non-formal education sector, acting as an intermediary between the state and civil society organisations. Its main role is to identify, mentor and support initiatives to advance literacy and digital literacy. As a partner for PAJEF, the CNOAS has been overseeing :

- ☞ the profiling of 2,000 young girls and women in three regions of Senegal; and
- ☞ the setting up of the IT system for the online training of 2,000 young girls and women in the three regions.

Each of the partners is required to carry out monitoring and evaluation at each stage of the programme, as well as to submit certified financial and technical reports to UNESCO.

While these are the main partners in the programme, PAJEF has also taken steps to include the whole community in the project, rejecting more traditional, managerial approaches to education.

Aims and Objectives

- ☞ To improve access to education for 40,000 illiterate and newly literate women aged between 15 and 55 years;
- ☞ To improve social and economic conditions for 40,000 girls and women;
- ☞ To introduce new technologies (ICTs, mobile



phone, TV programmes) to create a sustainable literacy environment and ensure the reinforcement of basic literacy skills; and

- ✎ To meet the Education For All target of achieving a 50 per cent improvement in levels of adult literacy by 2015.

PROGRAMME IMPLEMENTATION: APPROACHES AND METHODOLOGIES

The programme has used a number of different approaches to learning, including face-to-face classes, ICT-based tuition and the use of television programmes.

Courses are available on CD, on television, online and on mobile applications. This means that as well as improving their literacy skills, participants are also able to improve other skills relevant to day-to-day life in Senegal, including IT skills and vocational skills.

PAJEF has opened up more than 200 classrooms, equipped with digital kit which includes a laptop, an interactive beamer and an infrared stylus touch pen used to write on a digital board. Adapted software is also included in the kit. These were provided by the Sankoré programme, an educational partnership involving the GIP ENA (a public interest group for digital education in Africa), the French Ministry of Foreign Affairs and UNESCO Dakar. Examples of the technology used and its installation process can be on the Sankoré website.

The software, called Open Sankoré, is simple to use, as are the other components of the digital kit. Any adjustments can be made directly on the digital board. The software and other equipment have been designed to encourage participation and, thus, to promote an active rather than a passive approach to learning. They can be readily adapted to the changing needs of learners as they progress.

The wall of the classroom, painted white during installation, is used as the digital board, or interactive wall. Through the video projector, or interactive beamer, the infrared stylus touch pen can be used to illustrate the lesson on the wall. The text can be easily manipulated, deleted, modified and saved for later use. Supplementary material and interactive lessons, stored on an online database, can be accessed via the internet when required. Laptop connection means that lesson materials and other resources can easily be generated and presented on the digital board.

A partnership with RTS (Radio Télévision Sénégalaise), Senegal's national television station, has helped make television a key feature in the classroom, with various news and educational programmes used during classes. This helps ensure that participants not only improve their basic literacy skills, but also learn about nutrition, health, the environment and other important issues. A television programme focused specifically on the promotion of literacy skills has also been developed (see below).

The DRTS oversees the production of the television and radio programmes used in the project. Twelve programmes were commissioned at the outset, in seven regions of Senegal. The programmes were shown not only in the classroom but also in community multimedia centres.

The online classes were developed by ICT company Boîte à Innovations, in partnership with the CNOAS and UNESCO's regional office for education in Africa (BREDA), which is based in Dakar. They used an approach called «Alpha-omedia», which permits users to learn at their own pace, as well as to track their progress and select their courses. An Android-based mobile application, designed to be used offline, was developed with the Coalition of Literacy Practitioners, to enable learners to complete some modules on their mobile phones. The CNEAP supported the development of the online learning course and the preparation of pedagogical material.

Programme Content

The programme curriculum was based on the national framework of core skills, revised to reflect PAJEF'S fixed teaching requirements. Four areas of the basic framework were maintained, with some reduction in content and a strong emphasis on the ICT dimensions. These four areas are:

- ✎ language and communication: oral communication, reading and writing, and text production;
- ✎ mathematics: calculations and problem-solving;
- ✎ social education: communication for behavioural changes, citizenship and democracy education, health and hygiene, and environmental education; and
- ✎ entrepreneurial: business control and management, reinforced through the use of ICTs.

These areas constitute the minimum basis for programme content. They can be adapted to meet the specific needs of participants or their communities, as identified at the beginning of each training course. The various modules are developed by the CNRS, with adaptations made for different ICT components, all based on these initial criteria.

During face-to-face classes, mobile phones are used to teach writing through text messages and also to make calculations. Financial support is available for each class (usually 30 learners), to be used in developing income-generating activities. Participating in this part of the programme helps the women and girls strengthen their basic literacy skills through vocational training.



The online programme lasts 12 months, with each of the three modules spanning four months. As well as improving their literacy skills, learners get to develop basic IT skills.

A 10-minute literacy skills television programme is broadcast twice a week as part of a popular women's show. The programme, called «Dieg ak Keureum» (The Housewife or La femme au foyer), is broadcast during the day and has high viewing figures among women with poor literacy skills. The literacy section includes an introduction, a short literacy or numeracy lesson, and a mini-feature explaining how to put the lesson into practice. The section is broadcast in the local language, Wolof. RTS broadcasts a further programme aimed at encouraging adults to learn, also in Wolof, called «Jang du Wess» («It Is Never Too Late To Learn»).

All the lessons from level 1 of the programme have been recorded onto CDs, which have been copied and made available to other literacy classes and community multimedia centres in Senegal.

Recruitment and Training of Facilitators

Two-day training sessions were organised in each of the programme's seven target regions, overseen by academy inspectorates. The training was for teachers, programme facilitators and literacy managers and was designed to enable the various field actors to:

- ✎ identify participants' specific needs;
- ✎ analyse those needs and translate them into objectives and/or training content;
- ✎ integrate the needs into the national framework of core skills; and
- ✎ use the distance training programme for teachers.

The training sessions in each region followed the same outline.

In 2012, 66 literacy coaches, 45 literacy facilitators, 40 support workers and four supervisors received training. In the same year, 110 teachers were trained to teach PAJEF courses and 23 regional literacy ministry staff received training in monitoring, evaluation and management. The training was provided by the CRFPE (Centres Régionaux de Formation du Personnel Enseignant or Regional Centres for Training Teaching Staff).

DALN's face-to-face classes are facilitated by teachers from state schools who have been given training in adult education. They receive additional compensation for the literacy classes they facilitate.

Each facilitator receives a training guide which includes a copy of the national framework for core skills, as well as tutorial information they need to plan the classes.

In 2012, 100 teachers were given extended training by the CNRE, using ICTs, in the use of mobile phones and the internet in literacy and numeracy training. The content of the online teacher training programme is overseen by the DRTS.

The digital kits were delivered to UNESCO Dakar in June 2013 and set up the following month. A series of training sessions were held for teachers and technical teams to familiarise themselves with its use.

Enrolment of Learners

Face-to-face classes were set up in areas chosen because of their high levels of illiteracy and their poor gross enrolment rates – factors which determined the quota for each region for the initial 100 classes.

A key element of the programme was to explore the place of mobile technology and ICTs in literacy learning. It was important to find a way to implement this without significantly adding to the cost of the programme or having to supply additional equipment. To that end, the organisers were careful to find participants who already had access to a smartphone or who lived in an area in which learning centres with ICT equipment were located.

The DALN carried out a study of demand in all the proposed localities. This generated a database which was used to develop awareness campaigns in the target areas to engage participants, in particular

those with access to a smartphone, or from areas with adequate access to computers for the ICT component of the programme.

The CNOAS, which specializes in the profiling of participants, took charge of enrolment for 2,000 participants in three of the seven regions.

MONITORING AND EVALUATION OF THE PROGRAMME

The programme was designed using a results-based management approach, which meant that progressive targets were set in line with the programme's objectives.

The targets directly related to the empowerment of learners and participants include:

- ✎ knowing how to read, write and calculate;
- ✎ applying technical skills in the development of social and economic activities;
- ✎ accessing small financial institutions or economic networks to develop their activities; and
- ✎ participating in the development of a literate environment in the areas of intervention.

The targets directly related to girls in a vulnerable situation, in school or out-of-school, include:

- ✎ improving the performance of girls in school;
- ✎ reintegrating out-of-school girls into formal or non-formal education;
- ✎ training parents to accompany and maintain their daughters in school;
- ✎ creating a means of supporting girls to remain in school and of monitoring their progress; and
- ✎ giving pedagogical support to the most vulnerable girls either to keep them in school or to help them integrate into the education system.

Monitoring of the quality of the programme is carried out by the DALN, and is organized on two levels. First, decentralized monitoring is undertaken by the Inspection Academy (Inspection d'Académie), the Minister of Education's representative in each region, and the Departmental Inspectorate of National Education (Inspection Départementale de l'Éducation Nationale). This ensures that all centres are inspected in a systematic way, based on decentralized monitoring, the tools available and the quality of inputs and learning. The Inspection Academy reports to the DALN, which is responsible for overseeing any improvements that need to be made. Second, centralized monitoring is carried out by the DALN. This makes it possible to assess how well the

regional results conform to the programme objectives, and to find solutions to problems when they are identified.

Monitoring and evaluation reports are produced for each phase of the project by the DALN, which, along with the CNRE, oversees the production of technical and financial reports as well as the rigorous monitoring of all activities.

The technical and financial reports are submitted to UNESCO and are, additionally, certified by the Ministry of Education's Directorate General of Administration, Equipments and Coordination of PDEF (Direction générale de l'Administration et des équipements et la coordination du PDEF).

The DRTS also carries out monitoring and evaluation of field activities in relation to the television and radio programmes it has produced for PAJEF. It submits a technical and financial report to BREDA, certified by the Ministry of Education and accompanied by all relevant supporting documents.

At the end of 2013, an evaluation was carried out to analyse the efficiency of the digital kits. The results have yet to be published.

IMPACT AND ACHIEVEMENTS

The programme has achieved a great deal in a relatively short period of time. In 2012:

- ✎ 3,998 girls and women enrolled on the programme;
- ✎ 193 face-to-face classes opened;
- ✎ 2,300 girls and women were recruited to participate in the online programme;
- ✎ 900 girls and women were enrolled in alternative education programmes, with 54% ready to transfer into formal education;
- ✎ PAJEF provided support to nearly 1,000 girls facing difficulties in their schooling to prevent them from dropping out of primary school;
- ✎ 96% of girls in the programme passed their exams (primary school certificate) or progressed onto the next level;
- ✎ 93 learners took the lower secondary school leaving certificate exam and 84% passed;
- ✎ 110 teachers were trained to teach literacy classes for PAJEF;
- ✎ 23 regional managers were assigned to cover programme monitoring and received training in monitoring, evaluation and management;
- ✎ 66 facilitators were trained in virtual online monitoring;
- ✎ 45 facilitators were trained to give after-school

classes to girls at risk of dropping out of school; and

- ✎ 794 girls at risk of dropping out of school were given help.

While in 2013:

- ✎ 3,000 girls and women improved their basic skills through vocational training;
- ✎ 2,000 girls and women enrolled in new classes;
- ✎ 30,000 women were targeted by the literacy skills television programme; and
- ✎ digital kits were installed in all classrooms and used in the PAJEF programme (since the end of 2013).

There was also a positive impact on some of the programme's managing organizations, notably the National Literacy and Languages Directorate (DALN) and the National Centre for Educational Resources (CNRE), both of which were able to assess their ability to effectively manage education-sector resources. Local communities were mobilized and gave substantial support to the project, in terms of in-kind donations, facilitators' wage increases and the purchase of IT equipment.

The achievements of other projects in the sector, particularly Capacity Development for Education For All (CapEFA), contributed to the success of the PAJEF model and led to its being fine-tuned for use as a model for accelerated literacy acquisition in the context of the EFA and the Millennium Development Goals.

One of the programme's findings was that the desire to read and write text messages is a major motivating factor in engaging girls and women in literacy learning. Women often have no choice but to ask or pay someone to do this on their behalf. There is also a financial incentive, as text messages are often cheaper than voice calls in Senegal.

The initial results are promising. However, they do not include results for the ICT-based learning programme, which was integrated into the programme in mid-2013. Results for this aspect of the programme will be published separately.

The online classes are currently available to participants in the regions of Dakar, Diourbel and Matam.

LESSONS LEARNED

Various challenges were faced, both in the conception phase and during implementation. These raised questions concerning how to:

- ✎ Integrate ICT into literacy instruction and learning;
- ✎ Integrate ICT into monitoring and evaluation tools;
- ✎ Use local languages in ICTs;
- ✎ Train teachers in the specific software, and improve their general teaching abilities;
- ✎ Empower women with vocational skills training;
- ✎ Evaluate whether the literacy TV programme made for effective learning;
- ✎ Respond to the various difficulties which came to light during the teacher training sessions when teachers were able to give feedback on the online learning modules;
- ✎ Support those living in areas with poor internet connectivity to access the online learning site;
- ✎ Help learners with no access to a computer outside class and no means to download material to assimilate the course material; and
- ✎ Make available enough IT resource to make it possible for all participants on the online modules to access the material and work on it.

The training sessions highlighted the lack of IT skills among facilitators, as well as the difficulty some teachers had in seeing the training course through to the end, sometimes because they were obliged to relocate mid-course. Some teachers were reluctant to take ownership of the new technology, while there was a lack of participation in the validation of online modules in local languages.

The shortage of IT equipment combined with issues such as teacher relocation to diminished the motivation of some participants.

While efforts were made to share the «Alpha-media» approach to online learning with all the actors, including central authorities, local authorities, communities and others, there was notably lower participation among local authorities.

Profiling potential participants also proved a challenge. In Dakar, for example, working conditions were difficult, with staff working in small and cramped facilities and struggling with the limited availability of candidates. Taking into account all the needs expressed by the participating communities, and translating them into the various ICT interfaces used, in the time allocated, was also challenging. Similarly, insufficient time was available for the creation of applications and interfaces, the translation of the modules into Wolof and Pulaar, and the creation of virtual keyboards for these languages, among other things.

The programme is looking at ways to respond to these challenges. One of the most pressing concerns the lack of IT equipment, particularly tablets and smartphones. A new strategy is under discussion which may include making use of existing IT rooms in the regions. The CNOAS, with the support of the DALN, is pursuing the issue with the relevant inspectorates.

Further training is also planned to help teachers make better use of the online modules. This will probably be in the form of pedagogical days at which questions brought up during monitoring and evaluation can be addressed.

SUSTAINABILITY

One of the aims of the project was to produce a model that could be replicated on a larger scale. For that reason, it was important to keep costs, which can run high when using ICTs in the classroom, to a minimum.

The project supplied no mobile phones and applications were installed on the personal phones of participants. Areas where there was an existing supply of computers, as well as a high number of women lacking basic literacy skills, were identified and integrated into the project. Applications were installed on available computers. Teachers were able to download modules via the CNRE server.

Efforts have been made to use existing IT equipment and, where necessary, to supplement this with technology that is adapted to regional constraints and logistics, while also meeting certain financial constraints. Involving actors at all levels, including within communities, has been a key means of making this possible. Subsequent developments have included negotiations with the Ministry of Education to enter into partnership with mobile phone companies.

The PAJEF project inspired the Ministry of Education's national literacy programme, which was launched in 2013. The programme, which targets both young people and adults lacking basic literacy skills, is based on the use of ICTs and aims to improve literacy rates in Senegal by 2025.

PAJEF is now considered a model for improving national literacy while achieving economies of scale. Following the encouraging results in Senegal, UNESCO announced the extension of the project to Kenya and Nigeria, with the latter launching a similar literacy project in March 2014. Gambia has also expressed interest in replicating the project, in turn

stimulating interest in yet more countries, including Pakistan and Namibia.

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Jokko Initiative



COUNTRY PROFILE

Population

13.73 million (2012, World Bank)

Official Languages

French (Wolof, Peul, Sérère, Mandingue, Soninké, Diola and Manjaque are recognised regional languages)

Poverty (population living on less than USD 1.25 per day)

34%

Total Expenditure on Education as % of GDP

5.6%

Access to Primary Education – Total Net Intake Rate

73%

Youth Literacy Rate (15–24 years)

Total: 65%, Male: 74.2, Female: 56.2%

Adult Literacy Rate (15 years and over)

Total: 49.7%, Male: 61.8%, Female: 38.7%

Statistical Sources

UNESCO Institute for Statistics, World Bank, UNICEF Info by Country

PROGRAMME KEY INFORMATION

Programme Title

Jokko Initiative

Implementing Organization

Tostan

Language of Instruction

French, Fulani, Soninke, Mandinka, Wolof and Diola

Date of Inception

2007

Geographical implementation

Senegal, specifically in the regions of Kolda, Ziguinchor, Kaolack, Fouta and Tambacounda.

Programme Partners

UNICEF Innovation and the Center for Effective Global Action (CEGA).

COUNTRY BACKGROUND AND CONTEXT

Senegal is ranked 154th out of 186 countries in the United Nations Development Programme's Gender Inequality Index. Inequality between the sexes is

reflected in the country's literacy rates, which show concerning differences between men and women. Despite a clear improvement in the literacy rates of adults (aged 15 years and over) in the past decades (from 36.9% of men and 17.9% of women in 1988 to 61.8% of men and 38.7% of women in 2009) women's literacy rates remain significantly lower. According to UNESCO's Education For All Global Monitoring Report (2014), the disparity is greater still among women in rural areas. It reports that «only 20% of rural young women could read in everyday situations in 2010, compared with 65% of urban young men» (UNESCO, 2014: 21).

While Senegal continues to lag behind in terms of literacy and gender equality, there has been spectacular growth in mobile technology and the use of mobile phones since 2000. Subscriptions for mobile phones increased from 250,251 in 2000 to 11,470,646 in 2012.

Tostan is one of a number of non-governmental organizations (NGOs) to recognize the potential for mobile learning in Senegal. Tostan was set up in 1991 to empower rural and remote African communities through programmes of non-formal education based on human rights. It is active in Guinea, Gambia, Mauritania, Guinea Bissau, Mali, Somalia and Djibouti, as well as in Senegal. The organization aims to inspire positive social change in governance, education, health, environment and economic growth, as well as addressing the cross-cutting issues of child protection, early childhood development, female genital cutting, child/forced marriage and the empowerment of women and girls (for more information on the Tostan Community Empowerment Programme see: <http://www.unesco.org/ui/litbase/?menu=13&country=SN&programme=86>).

PROGRAMME OVERVIEW

The Jokko Initiative was developed to complement Tostan's established Community Empowerment Programme by strengthening the organization's literacy and post-literacy activity. The Jokko programme aims to increase communication and collaboration within communities, with special emphasis on empowering women, through a mobile phone-based group message system. The programme seeks «to harness the potential of mobile phones firstly as pedagogical tools to teach and reinforce literacy, organisation and management skills, and secondly, as social mobilization tools that help to build consensus around local development initiatives» (Debar and Jensen, 2013: 6).

The programme is implemented by Tostan in partnership with UNICEF Innovation and the Center for Effective Global Action (CEGA). Tostan is responsible for designing, testing and implementing the two phases of the programme. UNICEF Innovation provides funding for the project, promotes it within the United Nations and provides technical expertise on the development and maintenance of RapidSMS community forum. CEGA designs the project evaluation methodology and conducts baseline and follow-up surveys.

The Jokko Initiative was created not to replace traditional classroom-based literacy learning, but, rather, to enhance it by giving participants the opportunity to practise their skills in a culturally relevant, useful and engaging way. Jokko means «communication» in Wolof, the most widely spoken regional language in Senegal, and reflects the programme's aim of encouraging group decision-making in rural communities. The group SMS text messaging service provided by Jokko opens up new ways of communication within villages, while strengthening connections between its members. Participants can communicate with a network of people within their community simply by sending a text message.

The programme was successfully piloted in 10 villages in Velingara in southern Senegal, before being extended to 200 villages in the regions of Kolda, Ziguinchor, Tambacounda, Kaolack and the Fouta between September 2007 and December 2008. Velingara is typical of the sort of area the programme aims to reach: «Approximately 58 per cent of the population in Velingara is less than 20 years old. Velingara is a very rural area, with less than 25 per cent of the population living in urban areas» (Debar and Jensen, 2013: 9).

Aims and Objectives

- ✉ To promote communication between the members of communities while improving their literacy and numeracy skills;
- ✉ To empower members of the community, especially women; and
- ✉ To increase the influence of young people and marginalized groups in community decision-making processes.

APPROACHES AND METHODOLOGIES

The Jokko initiative consists of two phases. During the first, participants learn how to use the mobile phones; in the second, they use the phones to communicate with each other, specifically through SMS text messaging.



Phase 1: Mobile Phones for Literacy and Development (MPLD)

Tostan's local trainers facilitated 23 sessions on mobile phone literacy and the potential of mobile technology for community development in each of the 200 participating villages, as part of the Mobile Phones for Literacy and Development (MPLD) module. The module takes three months to complete, with participants attending three sessions each month.

All Tostan supervisors and regional coordinators working on the project attended a workshop on mobile phone literacy and the potential of mobile technology. The training was led by the project coordinator with the support of Tostan's IT department, Tostan Senegal, and other partners. The knowledge gained from the training was shared with local trainers at each of the regional coordination meetings.

Each class attracts, on average, around 50 learners. They are trained in the practical uses of standard mobile phone functions, with a special focus on applications such as sending and receiving text messages and storing and retrieving contact information. Those applications are particularly useful in improving the literacy skills of participants, as they read and write messages and navigate their way around the phone's menu.

Traditional and participatory learning and communication methods are used to support the learning of participants. These include explaining functions through transitions from concrete examples, to semi-concrete and abstract explanations. The menu of the mobile phone, for instance, is introduced as analogous to a mango tree, with each section of the menu represented as a part of the tree. The students begin with a concrete example, planning a climbing route on a real tree to get a specific



mango. This is then translated into a semi-concrete diagram of a tree on the classroom wall. Finally, the students move to the abstract, with the tree diagram becoming the menu diagram and the mango a specific function.

Phase 2: The RapidSMS Community Forum

The RapidSMS community forum was developed to encourage learners to send text messages in order to improve their literacy skills, increase their communication with other members of the community, help them exercise greater influence over community decision-making and provide a platform on which learners can exchange information more speedily.

The forum was the result of the collaboration between Tostan and UNICEF, which developed the RapidSMS framework. Available in local languages, including Wolof, Diolaa, Soninke and Mandinka, it allowed participants to send a single text message to all members of the community, using a special number, the so-called «numero jokko». Learners subscribed to the service by sending a message to Tostan, which cost five US cents. Every time a message was sent to «numero jokko» the sender paid the same amount. The cost of resending messages to all the subscribers, however, was covered by the programme.

The service has been used to announce community activities and events, such as meetings, vaccination



campaigns, weddings and funerals. Unfortunately, it ended in 2010 due to financial unsustainability, specifically, the cost borne by Tostan of sending the messages to all the forum's subscribers.

Teaching and Learning Materials

The Jokko Initiative uses many of the «traditional» literacy tools used in Tostan's other programmes, such as blackboards, chalk and flipcharts. In the early stages of the programme, participatory research led to the development of drawings and posters, such as the mobile phone poster, shown left. This poster allowed Tostan's trainers to draw what happened on the screen of their phone when they touched a button.

Development of the RapidSMS forum meant new additions to Tostan's Community Empowerment Programme's (CEP) materials, including around 10 training mobile phones per class, and 10 SIM cards. To keep the logistics of this project as light as possible and to ensure its scalability and cost-effectiveness, Tostan required participants to bring their own mobile phones to the classes and to use their own phone credit when exercises involved sending

a text message or placing a call. The small number of mobile phones Tostan provided helped ensure that those without mobile phones were also able to participate. At the end of the programme, mobile phones and SIM cards are either distributed to a local community committee (to be used at their discretion), or collected by Tostan field staff and transferred to another CEP village where Jokko classes are running.

Selection and Training of Facilitators

Tostan facilitators are given training on the CEP programme and on each new module. Their capacities are developed so that they can run classes in phase one of the Jokko Initiative and lead sessions in partner communities.

Initial selection takes into account the applicant's covering letter, their proficiency in the working language, and the skills identified during screening. The best of those who pass through this stage are selected at the end of the facilitators' training seminar.

For the pilot programme, Tostan used former facilitators already familiar with Tostan's approach and

vision. Tostan facilitators are now trained on the Jokko Initiative, and the MPLD module has been integrated into Tostan's Community Empowerment Programme and its training guide for facilitators.

Identification and Recruitment of Participants

Participants in the Jokko Initiative also participate in the Tostan Community Empowerment Programme. The programme is introduced to participants via local Tostan field trainers.

Before the programme begins, the mobile phones used for training are presented to the village chief and the local imam, who are asked to publicly endorse Tostan's rules for using the phones. Finally, it is explained to the community how the phones will be used once the sessions are complete.

MONITORING AND EVALUATION

CEGA monitored and evaluated the Jokko Initiative from 2009 to 2010. It designed a data collection instrument, identified potential comparison groups, analysed the data and wrote up the results. CEGA collaborated closely with Tostan's Monitoring Evaluation, Research and Learning Department in conducting the evaluation.

CEGA reviewed every message sent to the community forum between December 2009 and May 2010. Each of the 570 messages were translated into French and categorized by topics, such as health, education, the environment and the economy. Sending the messages enabled participants to develop their ability to write messages with a mobile phone, and to communicate about community events related to health (vaccinations, distribution of mosquito nets), education (enrolling children in school), the environment (bushfires) and the economy (income-generating activities). Use of mobile phones also allowed Community Management Committees to communicate and share information on topics of concern, to share with the community dangers, negative practices or decisions that might impact upon them, and to understand community members' concerns, the topics that interest them and the challenges they face. This resulted in a bank of useful data to guide interventions and the policies of partners and local authorities. The outcomes, strengths and difficulties identified in the evaluation were shared with stakeholders. Particular emphasis was placed on the contribution of mobile phone use in sharing information about sickness, and about issues of concern on health, the environment and the economy.

In March 2010 CEGA conducted a follow-up survey, which covered mobile phone usage, literacy and numeracy, social networks and the experience of participants in using the community forum.

Finally, 160 out of the 436 forum subscribers were interviewed by phone, and asked about their location, age, occupation, number of messages sent and secondary users in their household.

Anecdotal evidence was also collected by the case study authors, researchers and Tostan staff via interviews throughout the Jokko Initiative pilot and its subsequent implementation.

IMPACT AND CHALLENGES

Impact and Achievements

The findings of the CEGA were positive. There was a 40% increase in the number of participants able to use a mobile phone, and a 60% rise in the number of participants able to read the text messages they received. At the community level, the number of text messages sent and received increased by 400%. The proportion of women able to read the messages they received increased from 8.5% to 63%. This was reflected in the quantity of messages they sent, which rose from one to eight every three weeks.

Text messages were, in the main, sent to community members, friends and family and mostly concerned community events and financial and medical problems. The number of participants who owned a mobile phone rose from 16% to 29%. The proportion of women who owned a mobile rose similarly, from 12% to 25%.

The interviews conducted during the study show that participants, women especially, experienced a sense of empowerment in addition to improved literacy after completing the Jokko programme.

As well as increasing the literacy and mobile phone skills of participants, the Jokko Initiative also increased learners' awareness of human rights, particularly the rights of women within communities. In one case, use of the RapidSMS forum saved a girl from female genital cutting: «CEGA learned that a man in one of the Jokko pilot villages had intended to have his daughter undergo the practice of female genital cutting, despite the fact that his village had made a public commitment to abandon the practice. Using RapidSMS, community members had diffused information about the man's intentions. The man eventually changed his mind due to the mounting

social pressure that had been accelerated by mass texting» (Debar and Jensen, 2013: 26).

Testimonies

«My husband is in Europe. Before I took the Tostan classes, I could only call or wait for him to call me. I can text him and it saves us both money. He is surprised and happy.» M'Berry N'Diaye, Jokko Initiative learner

«I used to have to call my son over to do all my calculations for me at the market. Now, I can do all the calculations on my own and make sure that no one is cheating me.» Jokko Initiative learner

Challenges

Many challenges were identified during the delivery of the programme, the main one being the high cost of the RapidSMS community forum, which led to its termination in December 2010.

Technical problems, such as a lack of electricity, also proved challenging. Not all of the participating villages have electricity, which makes it difficult to charge mobile phones. However, participants often develop innovative ways to get around this, using generators, car batteries or solar panels to charge their phones. Most of these approaches, however, require mobile phone users to pay a fee of about 200 CFA francs (between 20 and 25 US cents) in order to charge their phones (Jaschke, 2010, p.63). This makes it impossible for some Tostan participants, often among the poorest and most marginalised in their communities, to access the service.

Translating the contents of the programme into the local languages was an additional challenge. The mobile phone literacy module was first developed in French, and then translated into six local languages (Wolof, Fulani, Diola, Soninke, and Mandingue). RapidSMS was available in French, Fulani and Diola. The process of translating and testing modules proved particularly time-consuming and meant the project incurred some unplanned costs.

Finally, the mobile phones sold in Senegal are only available in French and English. As a result, educators had to rely on the icon system and the mango tree analogy to explain the use of the phones to participants who did not speak those languages.

LESSONS LEARNED

The successful implementation of the Jokko Initiative was only possible because the right environment

was created and because it was introduced to people at the right time. Both mobile phone literacy and the RapidSMS forum began with a discussion of the benefits and development the service would bring to the community. It was explained that mobile technology would be used only to complement more traditional means of communication, which are a big part of Senegalese culture. It was also necessary to base the programme on an understanding and practice of democratic behaviour, human rights, problem solving, hygiene, health and literacy.

The learners are empowered by the programme, frequently passing on what they have learned to others. Younger participants learn faster and help the older ones, who are less familiar with mobile technology. Students often share new knowledge with family and community members who did not take part in the programme.

SUSTAINABILITY

As noted above, Tostan required class participants to bring their own mobile phones to the class and to use their own phone credit when sending a text message or placing a call. This helped ensure the project's scalability and cost-effectiveness..

In order to revive the RapidSMS community forum service, Guillaume Debar and Justine Jensen have recommended that Tostan explore a new partnership model with national telecommunication companies and try to obtain discounted prices for SMS text messaging (Debar and Jensen, 2013: 26).

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SOMALIA

Somali Distance Education and Literacy

COUNTRY PROFILE

Population

9,832,017 (2009)

Official Languages

Somali and Arabic

Primary School Net Enrolment/Attendance

9–22 % (2000–2007)

Adult Literacy Rate (15 years and over, 2000–2006)

Female: 25.8%, Male: 49.7%, Total: 37.8%

Statistical Sources

UNESCO (2011) EFA Global Monitoring Report, UNICEF, World Bank (July 2011) World Development Indicators Database

PROGRAMME OVERVIEW

Programme Title

Somali Distance Education and Literacy (SOMDEL)

Implementing Organization

Africa Educational Trust (AET) in partnership with BBC World Service (through the BBC World Service Trust)

Language of Instruction

Somali

Programme Partners

Department for International Development (DFID, UK), the European Commission and Comic Relief

Date of Inception

2001

BACKGROUND AND CONTEXT

For more than two decades, Somalia has been an epicentre of a violent armed conflict. The ongoing civil war has severely damaged the country's socio-economic infrastructure including schools. Many children and young people have been forced to abandon school due to the prevailing high levels of insecurity. Estimates from 2000 to 2007 suggest that less than 25% of children had access to primary education while the net secondary school attendance or enrolment ratio for the same period was 6% (8% and 4% for males and females, respectively). In addition, the few functional schools lack basic resources and qualified teachers. Thus, the conflict-engendered problems have created a «miss-

ing generation»; hundreds of thousands of young people deprived of access to basic education with some now being «too old» and unable or unwilling to attend formal schooling. In light of these challenges, attempts to address the problem of illiteracy in Somalia needed to involve innovative and flexible approaches to education which help people to receive basic education without compromising their security or livelihoods. It is with these considerations in mind that Africa Educational Trust (AET) in partnership with the BBC World Service introduced the Somali Distance Education and Literacy (SOMDEL) programme in 2001.

SOMDEL PROGRAMME

SOMDEL is an intergenerational radio-based distance education and literacy programme which was developed through an extensive participatory impact assessment (PIA) process involving potential beneficiaries in Somalia as well as Somali and other professionals. The extensive PIA process was primarily intended to make the programme more relevant to, and therefore capable of addressing, local needs as well as to bring the programme to the levels of the formal primary education system. As a result of this consultative process, the programme produced a condensed curriculum based on four cross-cutting themes:

- ✎ basic literacy and numeracy
- ✎ environmental studies
- ✎ life skills (health/nutrition/HIV/AIDS awareness, peace and human rights education)
- ✎ livelihood and economic self-sufficiency.

Having identified the thematic areas of study, Somali professionals (based in Nairobi and London) were engaged to produce the teaching-learning materials to be used for radio broadcasts and for home-based learning by participants. Overall, the extensive consultation process ensured that the programme had extensive local input and thus remained contextually and culturally relevant, while the involvement of professionals ensured that the programme maintained high educational standards.



Aims and objectives

The programme targets young men and women (aged 16 to 25 years) with limited access to education. Primary targets include those from socially disadvantaged backgrounds such as internally displaced people.

By targeting socially disadvantaged people, the programme endeavours to ensure that people in difficult circumstances, particularly girls, have access to high quality literacy, numeracy and life skills training services which will improve their opportunities for sustainable livelihoods in rural and other post-conflict areas in Somalia.

PROGRAMME IMPLEMENTATION

Recruitment and training of facilitators

Although radio broadcasts play a central role in the implementation of the programme, the role of teachers or facilitators is equally important. Programme facilitators or teachers are normally nominated by and recruited from within their communities either after contacting AET or other local partner NGOs or after being recommended by their communities.

Usually, facilitators are recruited from a pool of qualified but un-/underemployed teachers as well as from a large number of young people who have secondary education but because of the ongoing conflict have not been able to go to college or to find employment. To date, the programme has engaged about 500 teachers.

The teachers are not paid a salary and the work is seen as the communities' contribution to the programme. However, teachers receive stipends amounting to about USD 100 per year. Each teacher

is expected to serve about 20 learners although the teacher-learner ratio often rises to as much as one to 40 in some cities.

Enrolment of learners

Radio broadcasts play a key role in enrolling learners. In addition, community leaders and programme facilitators are encouraged to promote the importance of literacy and to encourage community members to enroll.

Teaching-learning methods

The implementation of the SOMDEL programme is based on the flexible and integrated use of three basic distance teaching approaches or strategies: 50 weekly 30-minute radio broadcasts, structured print materials and weekly community-based face-to-face tutorials/instruction.

The radio programmes (known locally in Somali as Macallinka Raddiya or Radio Teacher) are broadcast by the BBC Somali Service. Accordingly, the learning materials, as well as teachers' instruction manuals, are directly linked to the radio programmes in order to enable learners to follow the radio lessons and to allow the teachers to effectively mentor the learners. In addition, linking radio broadcasts with written materials also enables learners to study on their own (home-based learning).

The radio programmes are supplemented with face-to-face classes or tutorials which are provided by volunteer teachers. Teachers often use taped radio broadcasts which enable them to assist learners in areas without radio signals, and offer tutorials at a time and place that is most convenient to learners. This strategy has proved particularly important for women and girls, who are often expected to do household chores during conventional school hours.



The use of these teaching-learning strategies is not only meant to overcome the challenges posed by the severe shortage of resources including the lack of qualified teachers but also to empower local communities to independently implement basic literacy and life skills programmes. Hence, the strategies also promote a culture of reading outside the formal schooling system.

To enhance the effectiveness and sustainability of the SOMDEL programme, actual teaching-learning activities are always tailored to the specific context. For example, since most young people, especially young women, work during the «school day» the course is delivered in the afternoon at a time and a local location which suits their needs.

EVALUATION

The learners' examination scripts are marked by their teachers and the results are forwarded to the regional AET office for moderation.

In addition, AET also engages external experts to evaluate its activities. To date, two external evaluations, Fentiman (2003) and Thomas (2006), have been undertaken. The reports indicated that the SOMDEL programme has been a major success as indicated below.

IMPACT

Perhaps the most significant benefit of the programme is that it has reached many areas in Somalia where conflict and the lack of resources would have completely deprived many people of educational opportunities. Current estimates suggest that about 250,000 people in Somalia and Somaliland, as well as in neighbouring regions in Ethiopia and Northern Kenya, have been listening to the radio broadcasts

and gained new knowledge about health, nutrition, the environment and human rights.

SOMDEL is currently offering Level 1 and 2 literacy classes which are operating in 500 and 350 locations across the country. Together, these classes assist an average of 8,000 learners per year, differing between 10,000 in one year and 6,000 the next year. To date, over 33,000 learners (21,000 and 12,000 for Levels 1 and 2 respectively) have successfully completed the SOMDEL programme and 88% have passed the final literacy examination set «nationally» by staff from AET and from the local national examinations board. All graduates were awarded literacy certificates.

Around 75% of the participants are women from disadvantaged social backgrounds, being internally displaced people or labourers and the programme has played a critical role in improving the status of women in society.

Due to the ongoing conflict, there is an absence of post literacy materials in the Somali language, especially for new (basic) readers. The SOMDEL programme has developed over 60 short booklets written, edited and printed locally on topics chosen by local people to suit their needs and interests. A significant number of these booklets were written by students who had recently completed the SOMDEL basic literacy course.

Overall, as noted in a key evaluation report «SOMDEL has a lot of promise to deliver literacy, numeracy and life skills to thousands of disadvantaged people. SOMDEL is a flexible and adaptable approach to literacy and empowerment and in the long term it is hoped that SOMDEL will assist in the alleviation of poverty through access to basic education for all» (Fentiman, 2003).



In order to clearly highlight the impact of the programme on beneficiaries and their families and communities, the following testimonies are instructive.

Ali Jama (age 18, water seller): *Previously I didn't know exactly how much money I was collecting for the water and I think I was losing money. Now I know the names of the people and write the amounts in the books...now I know how much they should pay.*

Fatima (age 18): *I can read letters and write for my family and neighbours. Before I was ignorant and they weren't interested, they said I knew nothing. But now that I can read and write, they ask me to help them.*

Mahamed, (age 18): *Now when I get a letter from my friends or family, I can read it. Previously, I had to ask someone to read it for me. Now when I want to send a letter I can say anything – no-one knows but me. Before, the person who wrote the letter would tell everyone and every neighbour would know my private things, but I didn't have any choice...*

Halimo (age 60) lives in Hargeisa with her husband and her three youngest children. She began a tailoring business in 1995 when her husband became sick and was forced to give up work. Having been given no other educational opportunities, Halimo was keen to be enrolled on the SOMDEL programme so that she could become literate and better provide for her family. She started attending the SOMDEL classes in 2004, and has now completed both Level 1 and Level 2. Halimo reported that attending the SOMDEL classes had benefited her household's livelihood security because she is now able to more accurately measure out cloth, keep accounts and maintain records of monies owed to her by customers. She is also able to help her children with their

school work and feels that she has gained respect from her husband and family.

Mahamed (age 18): For most of his childhood, Mahamed worked as a livestock herder near Las Anod. In 2003 he moved to Burao to live with his uncle. Although his uncle owned a shop, he did not allow Mahamed to work for him because he was illiterate. However, since completing SOMDEL Level 1 in April 2006, his uncle has asked him to assist him in the shop so that he can spend more time caring for his elderly father.

Because Mahamed is able to read and has gained basic numeracy skills, he is able to keep records and accounts, resulting in an increase in profits in the shop. Although Mahamed is not paid, he feels that he has gained the trust and respect of his uncle and has increased his sense of purpose and responsibility. He is hopeful that his work experience will earn him a good reputation among other shop keepers in Burao, and enable him to secure paid employment in the future.

CHALLENGES

Lack of resources: Community-based classes are normally undertaken in places with limited teaching-learning facilities such as outdoors, in private homes and in primary classrooms after normal school hours. The lack of resources invariably affects the programme outcomes.

The programme depends on volunteer teachers who only receive a small per diem for their services.

Power problems: the radios use batteries which need to be replaced more frequently than originally planned, which makes the programme more expensive to run. In addition, it also means that learners risk going for some time without listening to their lessons while waiting for replacement batteries. To address the power challenges, AET has tried to use solar powered and «wind-up» radios. However, solar powered and wind-up radios are more expensive and do not play cassettes.

While the dominance of women in the programme is a positive development, there is need to encourage more young men to enroll on the programme.

Lack of knowledge: there is a deep-rooted belief among people in many communities that formal education (which, given the option, is preferred) is for boys and non-formal education programmes are for girls and young women. In light of this, there

is a need for campaigns within the community to change these negative perceptions.

SUSTAINABILITY

The sustainability of the programme is based on three principal factors. First and foremost, there is high motivation among young Somalis for education and literacy training. As such, most participants often use their own resources to purchase radios in order to listen to AET educational broadcasts. Community support is also very strong as education is viewed as one of the most important strategies in keeping young people out of the conflict as well as for promoting socioeconomic development. Accordingly, ordinary provide the infrastructure for community-based classes.

Secondly, the programme is also supported by the government. For example, in Somaliland, AET qualifications are officially recognised and the Ministry of Education signs the certificates offered to graduates. This enhances the credibility of the programme as graduates can use their qualifications for further education.

Finally, the programme is cheap to implement. Apart from radio broadcasts, teachers also receive audio cassettes which they use as teaching aides especially for teaching people in areas with limited radio signals or with limited access to radios.

LESSONS LEARNED

The importance of timing radio broadcasts to suit local needs is critical for the success and effectiveness of radio-based distance education programmes. There is also a need to disseminate information about distance and non-formal education to create a better understanding in the local population and avoid the misconception that non-formal education is second rate, girls' education. It is also important to ensure that the «footprint» of the broadcasts is assessed so that, if good quality short wave reception cannot be received, alternatives can be arranged, e.g. broadcasting through local FM stations or transferring broadcasts to cassettes. The difficulties of distributing print materials in hard to reach areas must be addressed from the outset to reduce problems later on. Finally, long term solutions to power and battery supplies should be considered such as the use of solar powered or wind-up radios.

Distance education programmes are likely to be more effective when the community is involved. In the case of the SOMDEL programme, the course content is based on what the community wanted

and was developed with close community input. In addition, the radio broadcasts incorporate key ideas and life skills which are accessible both to students and the general listening population. This provision of quality course materials, produced externally but delivered locally, is a key element in the success of distance education programmes.

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SOUTH AFRICA

Bridges to the Future Initiative

COUNTRY PROFILE

Population

47,432,000 (2007 estimate)

Poverty (Population living on less than USD 1 per day)

10.7% (1990-2004)

Official Languages

Sepedi, Sesotho, Setswana, siSwati, Tshivenda, Xitsonga, Afrikaans, English, isiNdebele, isiXhosa and isiZulu

Total Expenditure on Education as % of GNP

5.5

Access to Primary Education – Total Net Intake Rate (NIR)

51% (2005)

Total Youth Literacy Rate (15–24 years)

94% (1995-2004)

Adult Literacy Rate (15 years and over, 1995-2004)

Total: 82%, Male: 84%, Female: 81%

Statistical Sources

UNESCO: EFA Global Monitoring Report, UNICEF: Info by Country, World Bank: World Development Indicators database

PROGRAMME OVERVIEW

Programme Title

Bridges to the Future Initiative

Implementing Organization

Molteno Institute for Language and Literacy and the International Literacy Institute

Language of Instruction

English, Sepedi, Xitsonga, Setswana and Tshivenda

Funding

South Africa Department of Education; JP Morgan Chase; W.K. Kellogg Foundation; Spencer Foundation; University of Pennsylvania; USAID; and the World Bank

Programme Partners

South Africa National Department of Basic Education; Limpopo Provincial Department of Education; Trydian Interactive Software; the Pan South African Language Board; CSIR-Pretoria; and the University of Limpopo

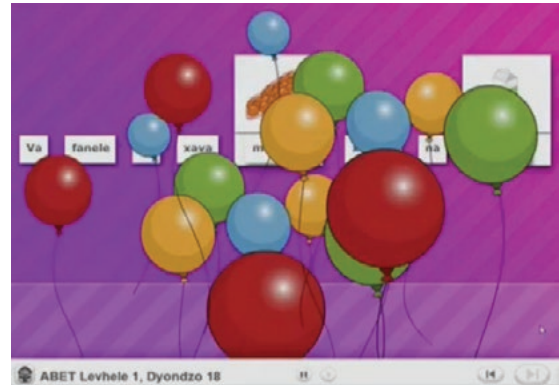
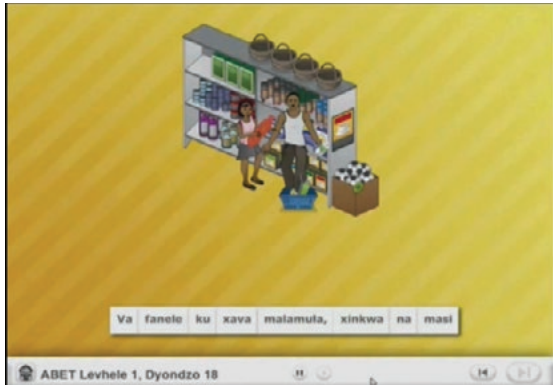
Date of Inception

2007

COUNTRY CONTEXT AND BACKGROUND

Located at the southern tip of the African continent, South Africa is a multiethnic society encompassing a wide variety of cultures, languages and religions. The country's pluralistic composition is reflected in the official recognition given to eleven languages, all guaranteed equal status in law. Although English is the language most commonly used in public and commercial life, it is only the fourth most spoken language in South Africa (Statistics South Africa, 2012). According to the 2011 census, isiZulu is the language most commonly spoken at home, by 22.7% of the population. It is followed by isiXhosa, which is spoken at home by 16% of the population, Afrikaans (13.5%), Sepedi (9.1%), and Setswana and English (both 8.2%).

Literacy is essential for participation in the modern world. Yet, poor literacy remains a problem for many adults across South Africa. The challenge is compounded by the multi-lingual, multicultural nature of the society. According to statistics submitted by South African authorities to the UNESCO Institute for Statistics, 93.1% of adults in South Africa can read and write (2012). However, the General Household Survey (GHS) conducted by Statistics South Africa (StatsSA), on which this figure is based, defines adult literacy as the self-reported ability to read and write short sentences. The 2012 survey asked adults over the age of 15, whose level of education was lower than Grade 7, whether or not they were able to write their name, read and fill in a form, write a letter, calculate monetary change or read road signs, or if they had some degree of difficulty in doing so (Statistics South Africa, 2012). The GHS assumes that anyone with an education level equal to or higher than Grade 7 is literate. However, national and international assessments suggest illiteracy to be more widespread than this, with previously marginalized communities ranking among the lowest for literacy in South Africa. In 2006, for example, South African children obtained the lowest scores in the Progress in International Reading Literacy Study, which assessed reading competency at Grade 4. In 2007, South Africa was placed 8th out of 15 participating countries in the SACMEQ (Southern and Eastern Africa



Consortium for Monitoring Educational Quality) study, obtaining a lower score than Botswana, Tanzania, Zimbabwe and Namibia. South Africa's own 2011 Annual National Assessment revealed a similar picture, with only 31% of Grade 3 and 15% of Grade 6 learners obtaining a score above 50%. These tests were administered in the languages the learners speak at home. It is likely that learners' reading skills are even less well developed in the learners' second language, which is English for many South African learners. Despite the government's stated commitment to multilingualism and the promotion of mother-tongue literacy in all aspects of public life, the education system still privileges the Afrikaans- and English-speaking elite (UNESCO Bangkok, 2008).

This problem is made worse by the popularization of digital technologies, which has created a digital divide between rich and poor. Research shows that English is the prevalent language on the World Wide Web, accounting for 32% of total content in 2006, with Chinese next, at 13% (Wagner, 2014). A similar bias can be found in the instructional software industry, in which English is the most frequently used language, often at the expense of other international languages, including major regional languages (ibid). This creates barriers to engagement for many people from ethnic-minority backgrounds, thus deepening the digital divide.

BRIDGES TO THE FUTURE INITIATIVE

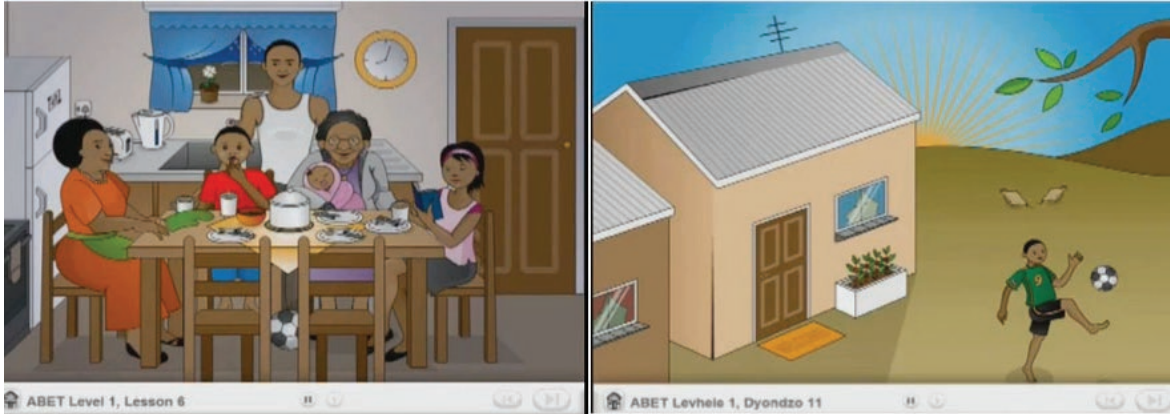
The Bridges to the Future Initiative (BFI) was modeled on a pilot project in India, begun in 2004 in the state of Andhra Pradesh. The concept behind it, to improve literacy through interactive, computer-based lessons, was developed by the University of Pennsylvania's International Literacy Institute (ILI), which continues to support the programme. The initiative is spearheaded in South Africa by the Molteno Institute for Language and Literacy, a local non-governmental organization. Using its staff resources

and the knowledge it has gleaned from working in literacy in South Africa for 40 years, Molteno, with input from the ILI, developed the programme, which was implemented in 2010 in the Limpopo province. A local software developer, Trydian Interactive, developed the software to support Molteno's vision. The success of the programme in working with adults led Molteno and ILI to seek funding to expand the programme to primary school learners.

The programme is supported on the ground by the National Department of Basic Education, the Limpopo Provincial Department of Education, and the Premier's Office. Steering committees were established within Limpopo to support the implementation of BFI in 55 primary schools in the province, with the government institutions committing to support the programme's ongoing expansion. The aim is to deliver the programme in 200 schools by the end of 2015.

In South Africa, BFI is presented in three African languages – Sepedi, Xitsonga and Tshivenda – as well as in English, to support literacy instruction and reading achievement. The programme promotes the acquisition of reading skills through supplementary instruction using mobile tablets, as well as through instruction supported by desktop computers (Molteno, 2013).

The programme not only improves access to good-quality educational materials, but also, by using native African languages, provides a critical motivation to learn for communities historically marginalized in South Africa. Although the province of Limpopo is one of the poorest in South Africa, a number of its schools (approximately 10% of the total) have computer laboratories. Typically though these only offer access to materials written in English. The BFI programme helps fill the gap in available mother-tongue resources in the region. It also builds on the inherently motivating features of



ICTs in contemporary Africa. Working with the South African National Department of Basic Education, the programme has provided national leadership in the use of ICTs in learning and literacy. BFI South Africa provides a self-paced learning environment with continuous evaluation and support opportunities which help expand the scope of the programme beyond the school walls, engaging parents and children in intergenerational ICT-based literacy at home. It is one of the first programmes in South Africa to do this.

The implementing organization, the Molteno Institute for Language and Literacy, was established in 1974 as a Rhodes University project. Molteno aims to provide professional development for teachers in a cost-effective manner, and to improve learner attainment, as well as addressing South Africa's literacy and language challenges through research, with a focus on ICT development (Molteno, 2013).

The International Literacy Institute was established in 1994 by UNESCO and the University of Pennsylvania's Graduate School of Education in the United States of America. It has provided technical assistance in the development of prototype multimedia software in the Sepedi language and has worked in partnership with the University of Limpopo on field-based research on language and literacy issues. In 2007, ILI and Molteno signed a partnership agreement for working together on the BFI project, focusing on the use of South African languages in multimedia applications.

Aims and Objectives

The BFI programme aims to:

- ✎ Provide interactive ICT learning content for adults and primary school children to support the development of both basic literacy and computer skills;

- ✎ Offer authentic learning content in home languages for Limpopo adult and primary school learners;
- ✎ Design interactive activities to support recognition of letter sounds and phonemes, as well as sentence and whole-text reading;
- ✎ Support and complement classroom teaching by offering appropriate content and revision work to supplement it; and
- ✎ Address the digital divide in education and technology by improving students' literacy, basic education and technological skills, helping them develop the means to better determine their own social and economic futures.

TEACHING AND LEARNING: APPROACHES AND METHODOLOGIES

The programme recognizes mother tongue-based literacy as a key factor in language learning. Discrimination against mother-tongue languages has had a negative impact on literacy education (Quane and Glanz, 2005), resulting in learner resistance and disengagement, and contributing to high illiteracy rates, poor school attendance and high dropout rates (*ibid*). Mother tongue-based literacy is vital in reaffirming the value of local knowledge as well as in building learners' confidence. Effective literacy education needs also to reflect locally relevant literacy practices in languages which are accessible to learners (*ibid*). By utilizing multimedia-based ICTs in local languages, BFI acknowledges local need and knowledge, while addressing the digital divide by improving mother tongue-based literacy skills, basic education and computer skills. Learners leave the programme better able to act in determining their own futures and that of their community.

The programme uses a phonics-based approach to teach individual sounds, blends, and complex letter construction, reinforced through phonemic recogni-



tion activities and spelling games. Although African languages have been romanized, using the limited set of letters available in English, they nevertheless contain a number of complex and nuanced sounds not found in English. BFI, therefore, in addition to introducing individual letters, also introduces complex combinations, providing learners with a visual image of the letter (in upper and lower case) along with an audio track of the corresponding sound and examples of words that begin with this letter. This is followed by a number activities in which learners identify words beginning with the target letter or combination of letters and use the target phonics to build words.

Lessons also include a listening component, a reading passage with comprehension questions, punctuation activities, and grammatical awareness activities. The programme is designed to complement the existing national curriculum, offering learners a choice as to the language of instruction.

Programme Content and Teaching Material

In assessing learners' needs, Molteno drew both on its long history in the literacy field and on current research projects on literacy. The programme targets areas of literacy in which learners are typically low-performing, such as punctuation and comprehension, as well as emphasizing the phonemic skills necessary for further progress. As noted above, it is self-paced so that learners have the freedom to progress at the rate that best suits them. Access to mobile tablet technology had increased this flexibility still further, creating learning opportunities outside the classroom and during extended breaks (such as during holidays), which reinforce classroom-based learning gains.

Curriculum content was developed in line with the South African Curriculum Assessment Policy

Statement, which is part of the National Reading Strategy for South Africa. The frequency with which particular phonic combinations occur was analyzed, using available dictionaries to help determine the order of introduction and the most natural order of progression in language learning. The BFI materials have been formally vetted by curriculum officers in the South African Department of Education.

The teaching material was developed collaboratively by Molteno and the International Literacy Institute, in partnership with NGOs and government agencies. Although the listening component and the opening animation sequence is the same in each language, all other content was developed independently in each language by teachers, language experts and curriculum experts. The final content was extensively piloted in rural areas to ensure its suitability and was reviewed by teachers and principals at schools and education centres.

The multi-media programme has the following features:

- ✎ An interactive learning environment with attractive visuals and audio in a choice of Sepedi, Xitsonga, Tshivenda and English; and
- ✎ An easy-to-follow introductory tutorial to develop and practise basic computer skills.

By using animation to engage learners, the package aims to promote rapid learning at whatever pace suits the learner in question. The learning content is closely associated with the daily routine of a typical family in Limpopo. Consequently, learners can easily identify with the content, creating an additional motivation to learn. Throughout the programme, the learning content focuses on the actions of a typical family and their community. Each lesson starts with a story animation which grabs the learner's attention while providing a familiar context to the



learning content. The stories build upon each other and support the development of other life and vocational skills.

After the story animation, learners are guided through a series of interactive exercises. The picture below is from a listening exercise. The learner must click on the words to listen to them. Learners can click on the words as often as they like until they feel comfortable moving on to the next activity.

Learners' progress is tracked throughout the programme using USB sticks in order to provide further feedback, to both participants and instructors. After the completion of each exercise, learners are congratulated and motivated to proceed to the next module.

Throughout the curriculum, learners have complete control over the learning process. With the supportive voice-over guidance to lead them through each lesson and activity, learners move through the curriculum at their own pace. The easy-to-use navigation controls mean that learners can interrupt the lesson at any time, repeat an activity, or listen to words or sentences again. This allows them to achieve success with each lesson and to build their confidence, motivating them to go on to other levels.

The overall aim of the initiative is to close the digital divide in South Africa by improving literacy as well as computer skills. The next phase of the project will involve it expanding to include all eleven of South Africa's official languages, allowing for roll-out across the whole country.

Innovative Features

The programme is innovative in several respects:

- ✎ It is the only substantive literacy programme in

Africa offering multi-lingual literacy instruction using computers and tablets;

- ✎ It is the first South African programme to use early literacy materials relevant to children, young people and adults, while also attending to the needs and motivations of learners of different ages. This can be done, for example, by adapting the story line: while the content of the adult programme might focus on vocational issues, the primary school programme can look at borrowing a book from the library;
- ✎ The programme uses local languages as a motivational tool, allowing teachers to switch easily between different languages in accordance with the needs of learners;
- ✎ It is the first South African programme to use Early Grade Reading Assessment (EGRA) on an ICT-based multi-media programme. EGRA is one of the tools used to measure students' progress in learning how to read (Grove & Wetterberg, 2011). The screenshot below shows assessments developed in three local languages, and English; It is the first time that a literacy programme in South Africa has utilized randomized control trials to judge the impact and effectiveness of ICT-based materials. The intervention is administered at school level and the results compared to a counterfactual outcome.
- ✎ It is one of the few South African literacy initiatives to involve a wide partnership of stakeholders, including NGOs, universities, government agencies, the private sector and foundations, communities, schools and learners. Programme partners include the South Africa Department of Education; Limpopo Provincial Department of Education; Trydian Software; Pan South African Language Board; CSIR-Pretoria; and the University of Limpopo; and
- ✎ It is one of the first South-North literacy partnerships involving a major international research university working in partnership with an Africa-based and African-led NGO, sharing students, ideas, resources, in both directions, over an extended period.

Recruitment and Training of Facilitators

The programme is facilitated by teachers, teacher trainers and ICT-qualified personnel, who are paid USD 20 per day. Molteno staff train the facilitators. Additional programme-specific training takes place over three sessions, with Molteno staff working directly with facilitators. The facilitators are given in-depth support on how the BFI programme functions, troubleshooting and how to navigate through the activities.

Selection of Project School

Fifty-five schools were selected for the initial roll-out of the programme, with delivery planned through a combination of PC and tablet. The programme targeted poorly resourced «no fee» schools with functioning computers. The schools were selected in consultation with the provincial governing bodies, and, as far as possible, encouraged to schedule and provide access opportunities to all learners in Grades 1, 2 and 3. With few exceptions, the schools have been able to deliver these schedules.

Assessment of Learning Outcomes by Students

Grade 1 and 2 learners do not participate in an external evaluation. However, Grade 3 learners participate in South Africa's Annual National Assessment examination. At the end of the year, the scores of participating learners can be compared to non-participating schools with similar characteristics. All learning outcomes will be assessed using the EGRA instrument used in baseline tests at each of the intervention grades. Results gained at the end of the programme are compared to initial scores to determine improvements in learning outcomes and compare them to improvements made under the regular literacy curriculum.

MONITORING AND EVALUATION

Initial inspection of computer laboratories was conducted at each of 45 participating schools to ensure they met minimum system requirements. A further 10 schools used tablets. Regional facilitators based in Limpopo follow a monitoring schedule to provide ongoing field support, to verify that teachers are using the programmes as intended, and to inspect the laboratories. A time-on-task monitoring instrument has been developed for participating teachers, detailing learner progress throughout the curriculum. The instrument captures the number of activities completed per session at two separate intervals, identifies the language used, and assesses whether learners are working independently or in pairs, the number of lessons completed and the number of times lessons are repeated. A «teacher log» is used to record the total amount of time spent in the computer lab per week and the overall frequency with which learners require intervention.

In order to evaluate the improvement in literacy skills, baseline tests of in-school learners were conducted in participating schools prior to implementation, using EGRA. This instrument was developed through support from USAID, and has been used in a number of countries in Africa to provide rapid feed-

back of learner progress in early literacy. The end-of-programme EGRA results are compared to initial data, and to the control group, to assess the impact of the BFI curriculum.

PROGRAMME IMPACT AND CHALLENGES

Impact and Achievements

- ✎ The BFI programme has successfully installed around 500 computers in 45 school computer laboratories across the Limpopo province and in 50 other adult basic education and training centres. Systems were scanned and Windows files updated to ensure minimum technology requirements were met. Schools have taken ownership of the programme, providing additional support such as the acquisition of headphones to ensure learners can access content effectively;
- ✎ The programme was designed to be both effective and sustainable. For that reason, considerable effort was put into securing long-term government support and involvement as the project is scaled up nationally; and
- ✎ Lesson content is authentically South African, and in the appropriate national languages. Most multimedia in Africa is in international languages, or is «localized» material translated from international languages.

Challenges

Quality. The BFI programme involved expert linguists, educators, and software designers in creating its ICT-based multimedia literacy tools. The content and language had to be checked at regional level in order to ensure the required quality. This was a lengthy process, with further revisions made on an ongoing basis in response to feedback from schools.

Infrastructure. As most computers in Limpopo are not connected to the internet, and have been updated only infrequently, the programme has had to take responsibility for upgrading and servicing many computer laboratories in Limpopo, both in schools and in adult basic education centres. The programme has had to allocate substantial time during roll-out to meet such contingencies.

Constraints. The programme encountered shortages of ICT expertise among teachers and literacy instructors. Most do not own computers and few are familiar with their use. Consequently, the BFI software was designed with an extremely user-friendly interface, including an introductory session aimed at orientating the user to the basic computer skills required to successfully navigate the lessons, offered

in three local languages and in English. Another constraint is the rapidly evolving nature of ICT platforms. In response to the change, the programme has begun to make use of handheld tablet devices. This platform, while potentially very useful, is even less familiar to users in Limpopo than desktop computers. Molteno staff are aware of this context and work with local agencies to overcome the barriers.

LESSONS LEARNED

The delivery of ICT programmes in rural settings presents a number of challenges. Schools may report having computers, but the computers they have are often not working, are virus-infected, or are so old they do not accept either USB or CD inputs. Some are running illegal versions of Windows, or do not run any, others suffer from faulty connections between hardware components, lack memory space, or cannot be accessed and/or updated due to lost administrator passwords.

Schools require a lot of ICT support with which they are not generally supplied. Few schools employ experienced ICT staff who can provide computer support. Many school staff seem to think their computers will «wear out» if used, and prefer instead to «save» them. In many cases the school environment is not conducive to keeping the computer labs clean. BFI staff have attempted to educate participating schools about computer care, but often the problem is that computers are simply not made for that environment. Schools with laptops or older PCs seem to do better, but these computers too may fail due to their age. In providing computers to schools in the future, durability should definitely be taken into consideration.

The lack of standardization of some African languages also presents challenges. Language use varies significantly by region, resulting in irregular and inconsistent spelling and pronunciation. Consulting one language expert from one area is not advisable when working with languages that do not have formal standardized forms, especially if content developers are working in areas with high levels of contact between users of different languages, such as urban centres. Ultimately, language speakers from each region, as well as language experts, editors and educators, were consulted and decisions on particular spellings and word usage made in a participatory way.

SUSTAINABILITY

The BFI approach is to include government authorities both in decision-making and in the roll-out

of services. As a result, the national government, impressed with the impact of the pilot phase, is planning to adopt the programme across the country, for use in a variety of education sub-sectors (for children, young people and adults), all in support of multi-lingual literacy. Key to the programme's sustainability efforts are the strategic alliances it has formed with the South African Department of Education and the Limpopo Provincial Department of Education, as well as the continuing input of a steering committee comprising all relevant stakeholders at provincial and national levels. Workshops with teachers, learners and community members have helped to engage and motivate learners. The national government has committed to a 500% expansion of the programme next year. The programme will also be available as an open educational resource, accessible via the national department's website. In sum, the programme's strategy for sustainability is to provide a low-cost supplement to literacy instruction which national and provincial government are prepared to support because of its impact on learners and the high-quality instruction it provides. Through its work, the BFI programme is also developing local ICT and reading capacity, for teachers and facilitators, as well as in schools.

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IRAQ

Civic Education Information Service for Female Iraqi Leaders



COUNTRY PROFILE

Population

32.6 million (2012)

Official languages

Arabic, Kurdish

Poverty (poverty headcount ratio at USD 1.25 a day)

2.8% (2007)

Total expenditure on education as % of GDP

5.1% (1989) (More recent data is not available)

Access to primary education – total net enrolment rate

87% (2011)

Youth literacy rate (15–24 years)

Total: 82.4% (2011), Male: 84.1%, Female: 80.5%

Adult literacy rate (15 years and over)

Total: 78.5% (2011), Male: 86%, Female: 71.2%

Statistical Sources

World Bank, UNESCO Institute for Statistics

PROGRAMME KEY INFORMATION

Programme title

Civic Education Information Service for Female Iraqi Leaders
Implementing organisation: Souktel (technology provider) in partnership with Mercy Corps (aid agency)

Language of instruction

Arabic

Date of inception

September 2010 (Souktel); March 2011 (Mercy Corps); duration for Mercy Corps: 18 months

Programme partners

Mercy Corps

Funding

Mercy Corps

COUNTRY CONTEXT AND BACKGROUND

Despite the existence of compulsory education in Iraq lasting six years, from age six to 11, it is estimated that between 20% and 25% of the Iraqi adult popu-

literation is illiterate (National Strategic Framework for Literacy, 2011): 1,289,851 men and 2,724,377 women (UNESCO Institute for Statistics, 2011). Women living in rural areas account for the majority, with half unable to read or write. In urban areas and major cities the illiteracy rate among women is lower, at between 28% and 30%.

There are barriers to adult literacy education. Most literacy tutors are teachers in formal schools who have not been trained to teach adults, and who do not receive any incentives for additional teaching hours. In addition, there are not enough literacy centres across Iraq and only a limited number of school buildings in some areas are available for adult literacy classes. This situation is exacerbated by the influx of Syrian refugees coming to Iraq, especially to Kirkuk in the north. Male voices still dominate many communities, and political instability has made travel between towns difficult. Together with the insecure state of the country in general, these factors make it particularly challenging for women to get around and communicate with their peers – which creates further barriers to improving literacy skills.

From 2000 to 2010 the Iraqi Ministry of Education conducted a campaign called «Illiteracy Free Kurdistan» and taught around 340,000 Iraqis from the Kurdistan region (northern Iraq) how to read and write. With the Literacy Initiative for Empowerment (LIFE), launched by the ministries of education in Baghdad and Erbil, the Iraqi government, in cooperation with the UNESCO Office for Iraq, aims to reduce illiteracy by 50% by 2015. Despite these efforts to decrease the comparatively high illiteracy rate, the Iraqi government has not yet achieved universal access to basic education and skills. Because of a lack of coordination among all parties, funding for literacy programmes remains scattered between civil society organisations and governmental institutions. In addition, a major barrier to female Iraqis acquiring basic literacy skills is the limited opportunity for interaction with – and positive reinforcement from – female peers. This has limited progress toward national goals for improving female literacy rates.

In response to these challenges, the social enterprise Souktel and aid agency Mercy Corps launched a mobile phone information service for female leaders in Iraq to mitigate the isolated situation in which women in rural areas often find themselves. The common use of mobile phones is seen as a key means of increasing information exchange among women and of enhancing literacy, numeracy, and civic participation.

PROGRAMME OVERVIEW

The Civic Education Information Service for Female Iraqi Leaders was launched by Souktel and international development agency Mercy Corps, as part of Mercy Corps' Empowering Women Peace Builders project.

Souktel is a social enterprise – a technology company which has a non-profit branch. The organisation began in response to what its team saw as a prevalent problem in Middle Eastern countries such as Iraq. Young people were leaving school with limited understanding of employment opportunities. They lacked resources they could consult and schools were not preparing them with any type of information. Souktel's intention was to make use of the mobile technology which most young people were already using, and to provide information about jobs and training through text messages on their mobile phones.

While focusing on specific components of their work, Souktel quickly grew into several other areas, such as education, economic growth and gender equality. They discovered that the same technology used to help young people find jobs could easily be applied in fields such as civic engagement and connecting women in leadership positions. The organisation now aims to deliver a wide range of mobile phone services which give low-income communities the information they need to improve their lives. The rationale for the mobile services which support Mercy Corps' «Empowering Women Peace Holders» and «Supporting Effective Advocacy for Marginalized Groups» projects is to connect female community members in leadership positions in rural regions of Iraq with peers or mentors in other parts of the country.

PROGRAMME DESCRIPTION

Mercy Corps' activities within the programme are intended to support women leaders in becoming more self-confident and empowered in voicing women's rights. As they improve their skills and competencies in terms of leadership, advocacy, networking and communication, they also become more pro-active in effecting social change. In order to better communicate among themselves and with others, and to share information and experiences, women leaders continuously seek to strengthen their networks, and use information and communication technologies (ICTs) intensively. Consolidating their relationships with policymakers, they contribute constructively to debates and decision-making processes on gender issues, promoting Iraqi wom-



en's empowerment agenda. They develop strong linkages with the media, largely to publicise women's rights, issues and concerns.

Before this programme, Souktel developed «JobMatch» and «AidLink», the Middle East's first platforms connecting job-seekers with employers, and linking communities with aid providers via mobile phone. This programme uses similar mobile technology but with a different objective. As many women in leadership positions live far away from each other in remote areas, Souktel created a platform called PeerNet which enables local leaders of women's groups to send each other news and information by text message. This helps to develop communication and build a network for solving problems through sharing information without the need to travel. Thanks to the platform, the members can also coordinate activities such as in-person training courses, leadership events or community meetings. The technology can be used by community members without any training and works because the use of mobile phones in Iraq is cheap, prevalent, and safe within one's own home, which is why they have become essential to improving local community relations. Any mobile-user authorised by Mercy Corps can access the platform, regardless of their mobile network. Every incoming text message is free while the user pays five US cents or less to send a message, but does not have to pay a registration fee.

PROGRAMME IMPLEMENTATION

The programme's objectives were achieved through:

1. building the capacity of women leaders working at a grassroots level, through mobile technology and, where possible, in-person training;
2. encouraging them to work together in support of common civic goals; and
3. promoting effective public education and advocacy actions in support of women's rights.

Reaching and Training Learners

Mercy Corps delivers training on civic engagement in local communities, and on a range of related topics, and is in charge of the service's content. Forty Iraqi women leaders from all backgrounds participated in a series of training workshops to build their skills and knowledge in leadership, advocacy, communication, media, women's rights, networking and coalition-building. After completing the training, the women leaders' network identified a common strategy to promote a national public education campaign on women's rights and advocacy. Through this campaign each female leader reached at least 300 members of their grassroots community, 1,200 individuals through the media and 15 different policymakers.

Network members had a ceiling of USD 1,000 per individual for advocacy and awareness activities. The participants had the freedom to design their activities. Examples could include university information campaigns, women's rights training, public events, and awareness-raising campaigns. Participant activities were aligned with the strategy, action plan and



key messages identified during the network meetings. These activities, and the number of community members and decision-makers reached through them, contributed to overall targets for the wider Mercy Corps-supported advocacy campaign for women's rights. Designated activities commenced in the ninth month of the programme.

The technology developed by Souktel supported in-person training delivered by Mercy Corps and carried this content. The continuous contact through text messaging can be considered as a follow-up learning effect, because of the knowledge shared via mobile which supported face-to-face training and interaction.

Enrolment and Activities of Users

The participating women were strategically positioned leaders running widely respected community organisations. Most of them have a mobile phone and use it on a daily basis. They have connections to local and provincial policy- and decision-makers, but still needed assistance and knowledge in how to effectively leverage their connections to advocate for women's rights.

The users sign up for the service by themselves, becoming members of a specific group with a specific topic of interest. This group is not open to the public, which means they can safely share information with other members in a trustworthy environment.

To take part in the programme, the women have to be literate in Arabic (in order to handle writing messages) and be in a community leadership position. The programme helps the women understand how the government, finances and community structures work. It enables members to improve their literacy skills, through regular text messaging, while learning more about these key concepts.

The women also had access to an online Facebook page and obtained personal coaching from mentors, which supported their coordination efforts, served as a reference for information about rights and also provided them with advice on effective advocacy and leadership. The female leaders were also able to make use of a pool of more than 20,000 SMS messages, which enabled them to receive information on all of these topics via mobile.

MONITORING AND EVALUATION

Mercy Corps initiated several activities to monitor and evaluate the programme's progress and success. For the former, they developed an evaluation plan and, for the latter, an outcome journal. The use of outcome planning meant that progress could better be measured. Moreover, they customised a strategy log as well as a performance log.

The performance monitoring plan and approach were the primary tools used to assess whether the programme was achieving the expected results. It was consistent with the DRL (Bureau of Democracy, Human Rights, and Labor) Monitoring and Evaluation Primer and was revised by Mercy

Corps in consultation with DRL at the programme start-up. For support, existing baseline surveys were available, a mid-term review was conducted in order to make necessary course corrections, and a final survey measured overall impact. The mid-term review and the final assessment included an external, independent evaluation in order to ensure that results were objectively verified. The independent evaluator used the baseline data collected through a Personal Capacity Index to monitor and evaluate the performance of the women advocates and the outcomes throughout the life of the project.

Innovative Feature

The use of PeerNet technology was the main innovation within this programme. It allows women to connect on an efficient basis and provides information which was previously out of reach for service users.

The software platform allows users to create labelled mailing lists containing a selection of phone numbers, so that many peers can be reached simultaneously with a single text message. That means that if a woman needs support or wants to gather ideas for a certain activity, other women with experience in the same working area can contribute their suggestions to the discussion. This feature can also be used to organise workshops, seminars, and small community projects via SMS.

Assessment of the Learner

The mobile platform also allowed Mercy Corps to conduct polls addressing local women and girls on specific issues, giving them the chance to voice their views and opinions and to give feedback on their training. For the evaluation of the feedback and training activities, the results could then be transferred to a SPSS or Excel document. Souktel does not measure the improvement of participants' literacy skills directly, but uses frequency of service use as a proxy for assessing changes in literacy: If women use the service more frequently, this is believed to correlate with an increase in literacy rates.

PROGRAMME IMPACT AND CHALLENGES

Key Benefits

Mobile phones enable marginalised or rural users to communicate in real time, without the need for travel or in-person meetings, which saves time and resources and allows more people to be reached. These advantages constituted key benefits for the Mercy Corps programme. The mobile phone infor-

mation service also contributes to a larger objective of Mercy Corps in northern Iraq – to equip more than 26,000 Iraqi women and girls with information about democracy and women's rights.

Impact on Working Processes

By means of a mobile phone, female leaders can easily access resources and information from other service users. For example, if a local school director wants to set up a programme, such as peace-building for girls from different ethnic or religious backgrounds, she can contact her peers to ask them for help and suggestions. Consequently, she can take advantage of her colleagues' knowledge and experiences regarding, for example, resources, potential participants and safe places to hold the meetings. This procedure has turned out to be an extremely effective way for women to exchange and stay connected. Before the programme started, many women in leadership positions in northern Iraq worked without the help of a cell phone, which limited their options for social networking and community participation.

Impact on Women

The programme increases women's awareness of how the government and other communities work, giving women in rural areas an equal opportunity to engage in political and social spheres. Souktel reports that participants are less isolated and that there was a notable increase of the frequency of communication between female service-users and their peers.

Testimonial

"I never understood how information can help build solidarity as I do now. I believe that women united by a dream for peace and connected through technology can truly change their communities for the better."

Female service user, northern Iraq

CHALLENGES

The financial costs of running the programme was an issue, as was the deteriorating economic situation of Iraqi households, which has resulted in the prioritisation of essential goods such as food and medicine over literacy. In these circumstances, and given the unstable security situation, questions can be raised about users' ability to pay for mobile messaging over time. Prevailing cultural norms are also a challenge for programme implementation, since, in many local communities, women do not have the

same rights as men. This is especially true in rural areas, where communities are already isolated from technological developments and internet connection. These realities suggest that, in many cases, it may be difficult for women even to learn about the availability of the PeerNet service, let alone to access it.

LESSONS LEARNED

Learning from Experience

When setting up this service, Souktel was able to make good use of the substantial experience it had already gained from developing appropriate technology and the implementation process of similar programmes.

Role of Women

Women are seen as the key to building stronger communities, although, in traditional family settings, their families may limit their mobility and participation in the labour force. Making it possible for them to connect with peers via mobile phones is a crucial step forward in developing stronger communities. The enhanced information flow which results from mobile use is helping and empowering the women to build up a strong network. As a result, they have the opportunity to effect social change.

Easy Application and Access

Not every young woman can access mobile technology, due to social or income constraints. However, mobile technology can help young women to gather information from the safety of their homes – which, in this case, poses a major advantage. Keeping the applications accessible to basic mobile handsets, Souktel has facilitated the participation of young women, because the software can be used even on a simple mobile phone and there is no need for web access or smartphones. Moreover, the platform is made available across all existing mobile network providers.

Communication Enhances Education

The women learn rapidly from regular exchange with their peers and are able to build up a comprehensive knowledge base, both on civic issues and in the area of general functional literacy. Periodic in-person contact with trainers encourages female leaders to keep on track with their current tasks and take part in further training.

SUSTAINABILITY

The launch of this service in Iraq coincides with the growing trend toward mobile applications for women in the developing world. Souktel is expanding in response to great demand for the technology services it is developing and providing. The process of providing information to a certain target audience is strategically important as it has many applications, from «how and where to hold a meeting» to «informing parents about a critical security situation». Accordingly, through a low-cost, long-term knowledge-sharing mechanism, the work of group learning and training is sustained.

Once the platform was set up, with funding from Mercy Corps, maintaining it did not prove costly. Running costs were kept to a minimum. While the cost of text messages sent by women to the service is a key financial consideration, these costs are no greater than those related to everyday mobile phone messaging. The service can, therefore, be considered financially sustainable.

SOURCES

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- ✉ Souktel (2011) Souktel and Mercy Corps Launch Iraq SMS Women’s Info Service (press release), <http://www.souktel.org/media/news/souktel-and-mercy-corps-launch-iraq-sms-womens-info-service> (accessed 10 March 2014)
- ✉ Souktel (2013) Five Easy Ways You Can Use Mobile Tech to Enhance Youth Livelihoods Projects

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LEBANON

Adult Literacy Using Information Technology (ALIT)

COUNTRY PROFILE

Population

4,100,000 (2007 estimate)

Official Languages

Arabic (other common languages are Armenian, English and French)

Total Expenditure on Education as % of GNP

2.7 (2005)

Total Number of Internet Users per 100 people

20 (2005 estimate)

Access to Primary Education – Total Net Intake Rate (NIR)

92% (2005)

Total Youth Literacy Rate (15-24 years)

96% (2002)

Adult Literacy Rate (15 years and over, 1995-2004)

Total: 88.3% (2007), Male: 93%, Female: 82%

Sources

The Middle East Institute, UNESCO: EFA Global Monitoring Report, UNICEF: Info by Country, World Bank: World Development Indicators database

PROGRAMME OVERVIEW

Programme Title

Adult Literacy using Information Technology (ALIT)

Implementing Organization

ECE - Electrical and Computer Engineering Department, Faculty of Engineering and Architecture, American University of Beirut.

Language of Instruction

Arabic

Funding

Rothmann Family Foundation and UNESCO

CONTEXT AND BACKGROUND

Lebanon's rates of access to education and youth/adult literacy rates are amongst the highest in the Middle East. About 90% of its youth and adult population is literate, while 98% of children aged six to eleven years attend school and 91% of children aged three to five enrol in early childhood education pro-

grammes, with few gender disparities. However, with Information Communication and Technology (ICT) increasingly shaping modern life and modes of production, the ability to function effectively in both the family and the work environment is no longer guaranteed by basic reading, writing and numeracy skills. Today, literacy also entails the acquisition and effective use of computing and ICT-based literacy and problem solving-skills. Adults who lack these skills are unable to function effectively in daily life. This, in turn, cripples national productivity, economic development and cultural growth. It has thus become imperative to resort to ICT-based programmes in order to effectively combat illiteracy and in turn, to build the necessary intellectual capital among citizens for increased productivity and improved standards of living (socio-economic empowerment). Consequently, the American University of Beirut (AUB, Department of Electrical and Computing Engineering) initiated the Teaching and Learning How to Use Information Technology Literacy Programme principally to combat illiteracy among adult Lebanese through computer-aided learning.

TEACHING AND LEARNING HOW TO USE INFORMATION TECHNOLOGY LITERACY PROGRAMME

The *Teaching and Learning How to Use Information Technology* Literacy Programme was designed and developed in consultation with the Ministry of Social Affairs through the National Committee for Literacy (NCL). It was born out of the realisation that traditional methods of combating illiteracy require the training of sufficient numbers of adult education teachers and facilitators. However, as demonstrated in many Arab countries including Lebanon, the training of adult educators is often hindered by a lack of funding. As a result, the effectiveness of adult education programmes has often been undermined by a lack of qualified personnel. The provision of ICT-based literacy training programmes is therefore an innovative intervention which addresses these



challenges. In addition, it generates a high degree of motivation among learners, which speeds up the learning process. Most importantly, it enables learners to make the transition from acquiring basic literacy skills to developing computer (ICT) skills.

As highlighted above, the programme is based on – and thus endeavours to enhance – a literacy skills training model initiated by the NCL (Ministry of Social Affairs). The NCL has two different adult literacy programmes: one targeting the working class, who cannot pursue daily tutoring, and another, more structured programme with three levels, each comprising 160 hours of instruction over nine months and averaging about five hours per week. These programmes are accompanied by textbooks, workbooks and instructor’s manuals. In the case of the structured programme, books are distributed for each level and organized into lesson units.

Programme Objectives

The major objective of the project is to combat illiteracy by teaching learners how to read, write and count in an interactive way through the use of computer-based images, sounds and text. The learner/user learns by viewing images, hearing sounds, speaking words into a microphone, writing letters and words on a writing pad, a touch screen or a tablet PC. Secondly, the programme also aims to build local skills in order to increase individual productivity and thus enhance national development.

PROGRAMME IMPLEMENTATION AND METHODOLOGIES

The programme’s core technological component helps learners to recognise speech and writing. This component also focuses on basic numeracy and consonants, the latter in their long and short vowel forms, drawing on examples of syllables, words and phrases. Teaching and learning are informed by and based on the following principles and methodologies:

Interactivity: In a computer-based approach, teaching must rely on interactivity. New skills can be learned but must also be tested progressively, and revisited if necessary.

Self-paced learning: Larger classrooms entail a great deal of compromise when it comes to pacing lectures. Individualised teaching allows learners to pace themselves, but discipline suffers. Information technology can balance these aspects by providing the convenience and flexibility that learners need while also catering to their particular strengths and weaknesses.

Learning through leisure: Computer-based approaches can often be designed in such a way as to engage users by providing what superficially seems to be a game, but actually strengthens their understanding.

The novelty of this approach lies in its ability to tap into information technologies in order to provide an educational model that not only reaches more people and enables them to become literate faster, but also familiarises them with the fundamentals of information technology. As such, the programme succeeds both in providing much-needed literacy and numeracy competencies and in bridging the «digital divide» by helping graduates from programmes that use technology to make the transition from literacy skills to computer skills. This approach can in turn lead to the development of a whole range of technological systems that help participants to learn both autonomously and interactively, such as speech and handwriting recognition programmes.

PROGRAMME IMPACT AND CHALLENGES

Computer-aided literacy learning is accessible and provides learners with an opportunity to develop computer skills and access a large body of information and learning tools.

Although the project was welcomed by members of the National Committee for Literacy and Adult Education (Ministry of Social Affairs), others were less enthusiastic. This prevented the programme from receiving much-needed official recognition, and financial and technical assistance.

It was also realised that no measure or amount of technology and creativity can replace experience in pedagogy. Consequently, the project draws on the experience of those involved in traditional literacy programmes and assures them that its aim is not to undermine their roles but to demonstrate that their expertise can be used in ICT-based literacy training and encourage them to adopt ICT-based literacy teaching methods. The challenges are therefore to overcome literacy professionals' initial resistance to the new ICT initiative by training them and assuring them that the new skills that they acquire will in fact improve their job security and prospects.

Although the thrust of the project was originally to combat illiteracy by providing IT-based education for adults, the same approach can be used for teaching children. Indeed, when we were presenting lessons that made use of computers, images and sound, participants would invariably ask for a copy of the lesson so that they could use it to teach their own children.

SUSTAINABILITY

The project was received with much enthusiasm by the Ministry of Social Affairs. As a result, the NCL provided key textbooks for use in the literacy pro-

grammes and also offered to provide test subjects to assess the project and compare it to their own teaching methodology. It is hoped that the State will continue to fund the programme or integrate it into the national system, thereby ensuring the sustainability of ICT-based literacy learning and education in Lebanon.

However, it should be emphasised that this programme was not designed exclusively for Lebanon. It is hoped that the cooperation with Lebanon's NCL will lead to the project being adopted by other Arab countries, as the programme's aim is to combat illiteracy across the Arab world, with the cooperation of national NCLs, UNESCO, and, potentially, the Arab League. This is, however, dependent on the availability of sustainable funding. Currently, funding from the Rothmann Family Foundation has been diverted to University department at the University, with a one-off allocation from UNESCO to pilot the project. Plans are underway to approach other financial partners for assistance.

LESSONS LEARNED

Although the project is still in its pilot phase, one key lesson that has emerged is that technology and creativity cannot replace the pedagogical experience itself. Hence, in order to combat illiteracy effectively, technology and pedagogy should be interwoven, under the guidance of experienced educators. This was ascertained during follow-up discussions with the NCL. In addition, with State cooperation, the initiative has the potential to empower the Arab world's illiterate adults, both qualitatively and quantitatively.

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Mobile Literacy Programme



COUNTRY PROFILE

Population

34,400,000

Official Languages

Dari, Pashto

Access to Primary Education – Total Net Intake Rate (NIR)

53% (2000-2006)

Total Youth Literacy Rate (15-24 years)

Total: 34%, Female: 18%, Male: 51%

Adult Literacy Rate (15 years and over, 1995-2005)

Total: 28%, Female: 13%, Male: 43%

PROGRAMME OVERVIEW

Programme Title

Mobile Literacy Programme in Afghanistan

Implementing Organization

Afghan Institute of Learning (AIL)

Language of Instruction: Dari

Programme Partners

Creating Hope International (CHI), US Afghan Women's Council at Georgetown University, Georgetown University, the US Afghan Women's

Council (USAWC), the UNESCO Chair at Georgetown University

OVERVIEW

The Mobile Literacy Programme in Afghanistan was a one year pilot project aimed at imparting literacy skills to communities, specifically targeting women, through a combination of classes and literacy tasks using mobile phones. It was carried out by the Afghan Institute for Learning (AIL) in conjunction with Creating Hope International. Modelled after a similar UNESCO/Bunyad Foundation pilot project in Pakistan, it was adapted for the context of Afghanistan and the specific challenges of its learners.

The programme is based on a combination of mobile phone technology and classroom teaching. It seeks to improve the literacy skills of women living in villages in rural Afghanistan by offering them a means of communication with peers and family. Participants are provided with a mobile phone, which also aids in their development of literacy abilities outside the classroom.

Due to the situation of education for women in Afghanistan, the imparting of literacy skills is very important, and this programme heralds a new means by which to do so. The project has been implemented in two villages at AIL's Learning Centres, reaching out to 25 women from each. These centres were selected for the strong community cohesion that is present in the villages, which supported the implementation of literacy projects. The close proximity of the villages to one another also ensured consistent communication between staff.

CONTEXT AND BACKGROUND

Afghanistan is improving its economic stability and population life expectancy, and moving forward in terms of education and gender equality. The Taliban's banning of education for girls significantly hindered women's literacy, but since they lost power, education for women has become increasingly important: it is reported that 39% of the country's students are now female.

Despite this improvement, Afghanistan continues to suffer from one of the lowest literacy rates in the world, estimated at 43.1% for men, and just 12.6% for women – a consequence of repressive governmental systems and over 30 years of war. Some efforts have been made to solidify an adequate education system, for instance through the implementation of primary schools open for girls to attend. Despite the announcement in 2007 of a National Action Plan for Women in Afghanistan, women's education does not formally extend beyond this measure. Women are also frequently denied access to public schools. This environment has left thousands of women unable to enter the education system and it is therefore very difficult for older Afghan women to develop literacy and vocational skills. In light of these problems, the project in mobile literacy has been a positive indicator of the potential for change.

Mobile phone use in Afghanistan has boomed from less than 1% of the population in 2001 to over 18 million active mobile subscriptions in 2012. The four major mobile services provide network coverage to at least 90% of Afghans. The extensive technological reach has prompted a number of organisations that can use this telecommunications infrastructure to reach out to under-served populations through various socio-economic programmes. These have included providing medical expert assistance to rural clinics through mobile applications, connecting farmers to market data, and extending financial services.

PROGRAMME

The Mobile Literacy Programme was implemented in conjunction with the AIL literacy course. It was designed to cover the material of the literacy course, which typically took 9 months to complete, in just four months. Rather than serving as a replacement for the literacy course, it was designed to reinforce classroom engagement and to encourage the consistent development of skills outside the classroom.

The first AIL centre was located in a rural village, based on the communal decision to develop a learning centre. The second centre, located in a village which lacked a public school, had an education centre as well as appropriate training provided for teachers set up through AIL in 2006. The project was inspired by the Pakistan UNESCO/Bunyard project, which recognised that one of the major reasons for a lack of literacy retention amongst the youth population is due to the fact that slipping back into a non-literate environment is easy once the course has finished. In Pakistan, literacy skills were shown to be maintained through integration of ICT, which motivated the students to continue to develop their skills.

PROGRAMME IMPLEMENTATION: APPROACHES AND METHODOLOGIES

The AIL Learning Centres, which initially opened in Afghan refugee camps in 2002, offer many educational opportunities. They provide courses ranging from income generation skills, such as sewing and carpet weaving, classes from preschool all the way up to the university level, training for teachers and administrators, academic and professional development courses, and workshops on human rights and leadership. Their mission is to empower Afghans through the expansion of educational opportunities and fostering of critical thinking skills, self-reliance, leadership and community participation. Teaching literacy is a fundamental focus of the AIL Learning Centres. The learners range from 10-50 years old, with mobile literacy learners ranging from 14-32 years old. The majority of learners are from rural families and have lived in the area for generations.

MOBILE LITERACY

The Learning Centres of the Mobile Literacy Programme were created after AIL approached selected villages and offered to aid in creating a community organisation that could implement literacy teaching. The first Learning Centre was established by an esteemed local teacher, who approached the elders of the village with the plan after having found



potential teachers and an abandoned house to serve as the school. The centre opened, originally offering three classes of literacy, Arabic and sewing.

The success of the Learning Centre was noticed by surrounding villages who then wanted similar centres of their own. A nearby village that wanted a school for women and children, but had a lack of teacher training and funds to support a teacher's salary, also set up a Learning Centre. Through appealing for financial and training support from the AIL, the quality of education was improved and developed. AIL's support for the village projects began in 2006. In two villages, the implementation of the Mobile Literacy Programme became a reinforcement of the literacy teaching that had already been established, in the hope that it would aid the speed at which literacy skills were attained. Mobile phones and texting cards were provided for each of the female literacy learners. There were 25 learners in each class at each Learning Centre, adding up to 50 in total. There was a teacher, a supervisor and a project leader from the AIL administrative office in each centre. The students attended their literacy class six days a week for four months.

Ensuring that Afghan women and girls understand the benefits of developing literacy skills can be challenging at times. The use of mobile phones helps

to bridge the gap between literacy development in the classroom and its continuous implementation in daily life and communication, as it becomes a tool for message assignments as well as for their personal lives. Alongside assignments to be written in notebooks, the learners were given additional work which was texted to their phones and typically involved questions and topics on aspects of their daily life. Establishing a daily foundation of literacy covering relevant topics helps learners to understand why it is practical and useful to use their skills in everyday life.

The project was originally designed for students who had at least a basic grasp of literacy but, in reality, it attracted a large number of participants who were not at all literate. However, by the end of the programme, almost all learners had made successful progress.

Literacy through texting

Many different kinds of messages were sent to the learners. The primary message was a «fill in the blank» sentence, which learners were required to rewrite with the word filled in. This approach ensured that the sentence was thoroughly read and practiced, and that the appropriate word was found. This was followed by open-ended questions



meant to facilitate critical thinking and writing skills, which necessitated the repetition of the question being asked. Some were opinion-based or required further research. Another task was to reorder sentences into the correct structure, giving learners the opportunity to practice comprehension and grammar. Experienced teachers acted as mentors to the students and were enthusiastic about using the mobile phone technology to supplement learning.

The literacy lessons were imparted through standardised methods, such as reading aloud in class, writing in notebooks and memorizing words, and were reinforced through mobile technology. Bridging learning in and outside the classroom through mobile technology was very effective and encouraging for students, who were able to see immediate progress and feedback on their developing literacy skills. Literacy skills became less of a task without a clear benefit and more of a useful skill that helped them to communicate in daily life and to increase their understanding of the world around them.

For this project, two experienced literacy teachers were required, along with a project leader based in the AIL Central Office, and a supervisor of each Learning Centre.

All students were given a mobile phone with enough credit provided to complete the literacy assignments.

The use of mobiles for personal use was encouraged under the assumption that it would both strengthen literacy skills and empower users.

MONITORING AND EVALUATION

The implementation of pre and post-tests ensured effective monitoring of the programme and student progress. The post-test measured the ability of students to come up with both short and long answers, compared with their ability prior to the project. Rather than measuring their ability to produce exact spellings or knowledge of words, it tested their ability to undertake tasks requiring literacy skills, such as following direction, reading questions and formulating response sentences that made sense.

Example questions are:

- ☞ Who do you respect and why?
- ☞ What did you do this morning?

IMPACT

The students attended their literacy classes six times a week over a period of four months. The project proceeded as planned, successfully combining classroom literacy work with mobile literacy texting. By the end of the programme, 83% of mobile literacy students were able to complete the post-test using

correct sentence structure and vocabulary, advancing to literacy level three.

An important factor in the programme's success was its use of established venues and experienced staff, in communities that encouraged and supported the literacy programme, providing numerous motivated and enthusiastic participants.

The following are testimonials from learners demonstrating the impact the programme has had:

- ✎ *"Before this class, I didn't have books and magazines in my house, but now I have three novels and eleven magazines and I keep them in a small library. This shows that I am one of the eager students of this class."*
- ✎ *"Now I am full of love of knowledge"*
- ✎ *"Before these four months, I didn't listen to the news or understand it. Now I always watch for the informative news because during the class we were looking for informative and scientific news for our messages."*
- ✎ *"Now I have self-confidence and I have decided to go to regular school next year."*

This is just a small selection from many quotes that clearly demonstrate the extent to which the Mobile Literacy Programme has had a positive impact on the lives of its participants. A lasting impact of the project has been the social opportunities that mobile technology opened up to participants, and that they were encouraged to go beyond the boundaries of lessons in the classroom. Feedback has shown that their new ability to communicate via mobiles allowed them to remain in contact with relatives from abroad and, furthermore, enabled them to become part of a new world of technological interaction. This was further impacted by the use of their new skills in understanding and interpreting the news and taking an interest in the world outside of their communities.

The programme was also empowering because it dispelled many myths and fears surrounding women's access to information through ICT in Afghanistan. For example, parents who did not think their children were safe using new technology began to turn to them for answers to their questions, and also started using the technology for communication. It also allowed social interaction for women who were typically confined to their homes, and helped to encourage the development of Afghan communities.

RESULTS

The results of the project have reflected great success following its implementation and potential for further literacy programmes to use this approach. Students in the literacy programmes sent an average of 1,750 messages, using their mobile phones every day. The technology was used for both completion of assignments and communication with fellow classmates, facilitating further practice of literacy skills in daily life and socialisation. After four months of literacy courses, 83% of students were able to complete the final test using correct sentence structure and vocabulary, meeting the requirements for progression to literacy level three as determined by the Afghan government curriculum. Additionally, some students left the course with the ability to read magazines and newspapers. Therefore, learners, including those who began the course with a non-existent or very basic level of literacy, progressed significantly. The results of the project demonstrated that a literacy level that normally takes nine months to achieve could instead be reached in two months with the integration of mobile phones. Consequently, two levels of literacy education were completed in four months. The improvement shown by the girls and women within a shorter time frame to move past the first level of literacy also represents considerable success. Students who participated in this programme have requested that it be expanded to all literacy courses and other AIL centres. There are now 83 literacy students waiting for the next Literacy Mobile Programme to commence.

SUCCESS

Aside from the pre and post-tests, there are further indicators of success:

- ✎ There was an increase in the number of girls and their families interested in participating in the programme, as reflected by the waiting list of 83 students for the next programme.
- ✎ All 50 students remained for the entire duration of the programme.
- ✎ There was an increase in critical thinking skills, as reflected by questions posed to the participants in post and pre-tests.
- ✎ There was an increase in the use of mobile phones for interpersonal communications and practical daily literacy, alongside a diffusion of skills into the girls' families, who also began to use cell phones based on training from their daughters.

CHALLENGES

- ✎ Retaining qualified and experienced tutors and trainers is a major challenge, as they do not receive any remuneration. This issue has led to high staff turn-over, which can affect the quality and continuity of the programme. This can be overcome through the provision of paid teaching opportunities.
- ✎ Although the programme acquires some funding from sponsors, membership fees and the sale of learning materials, this is not sufficient to cover the programme's annual costs. Furthermore, the sponsors that are there do not commit themselves to providing support on a long-term basis.
- ✎ There are cultural barriers to encouraging women's use of ICT and literacy classes.
- ✎ Rural areas suffer from a shortage of committed and qualified trainers.
- ✎ Prospective learners can be reluctant to attend classes in small communities, often due to the stigma attached to illiteracy. Therefore, there are some conscious efforts for community advocacy campaigns to break down the stigma attached to illiteracy.

Solutions and Recommendations

By respecting cultural guidelines, teaching staff and administrators helped to ensure that the programme was accepted by the families of the women involved. Three women removed from the programme due to these concerns returned once the programme's implementation and guidelines were explained to the families. Almost all of the girls who took part in the project overstated their literacy skills at the beginning of the programme but, despite this, they were found to have surpassed expectations significantly, showing that the programme was even suitable for participants with very low literacy skills.

To achieve greater empowerment of women and girls through education and technology, clear provisions must be made. These include:

- ✎ Increased availability of professional teachers that have the trust of the community.
- ✎ Safe, secure and adequately resourced learning centres.
- ✎ Access by women and girls to mobile phone technology and SIM cards.
- ✎ The will of the community to educate and empower girls.
- ✎ Political and cultural support to provide women with education and access to mobile technology.
- ✎ Further steps can also be taken to encourage the use of ICT and literacy among women:

- ✎ Promote the expansion of cell phone ownership and usage by women in a culturally sensitive way, working through mobile network operators to help them see the business advantages of acquiring female customers.
- ✎ Promote country-wide expansion of cell phone ownership and usage with a focus on educational benefits; build greater awareness among the population and specifically among women.
- ✎ Develop user friendly mobile phone technology that aids literacy (for example, through a phone app which could be valuable to teachers in classroom context).
- ✎ Coordinate cell phone strategies for women to integrate mobile literacy into other programmes.
- ✎ Create greater donor support for mobile literacy.
- ✎ Encourage existing platforms for women's education and mobility to promote the use of mobile literacy.
- ✎ Recognise and respond to energy requirements that accompany mobile phone technology use in rural areas.

LESSONS LEARNT

The pre-existing professional expertise and institutional stability of the people working for the Mobile Literacy Programme was a crucial aspect of its success. Given the experience of the teachers, no additional teacher training materials were required, aside from the list of questions to send participants through text messaging. A close teacher/mentor-student working relationship and teachers who were committed to ALL's mission allowed these individuals to build strong community and family acceptance of the mobile literacy programme, the value of technology-mediated instruction and learning, and the overall benefits of literacy and education for women and girls.

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Pink Phone



COUNTRY PROFILE

Population

14,606,000 (2011)

Official language

Khmer

Other languages

Chinese, Vietnamese, Cham and Khmer Loe

Poverty (population living on less than USD 2 per day): 49.5% (2011)

Total expenditure on education as % of GDP
2.6% (2010)

Access to primary education (last grade) – total net intake rate: 93% (2011)

Youth literacy rate (15-24 years)

Total: 87.1% (2009), Male: 88.4% (2009), Female: 85.9% (2009)

Adult literacy rate (15 years and over)

Total: 73.9% (2009), Male: 82.8% (2009), Female: 65.9% (2009)

Statistical Sources:

UNESCO Institute for Statistics

PROGRAMME KEY INFORMATION

Programme title

Pink Phone

Implementing organization

Women for Prosperity

Language of instruction

Khmer

Date of inception

2010

Programme partners

Metfone

Funding

Oxfam GB (funds phones and programme costs), Metfone (provides a credit of USD 3 for 51 mobile phones per month for one year)

Annual programme costs

USD 6,000 (USD 30 per mobile phone plus costs for inviting participants to attend training)

Annual cost per learner

USD 130

COUNTRY CONTEXT AND BACKGROUND

Cambodia is one of the poorest countries in Southeast Asia. Almost half of its population lives on less than USD 2 per day. In spite of its high poverty rate, only 0.2% of the population are unemployed, while, in 2002, Cambodia achieved a GDP growth rate of 7.3%, one of the highest on record in Asia (UNESCO Institute for Statistics).

Cambodia has a troubled recent history. Under the communist Khmer Rouge regime, which ruled Cambodia from 1975 to 1979, the educational infrastructure was systematically dismantled. Vital resources, such as schools and books, were destroyed, and between 75% and 80% of all professionals in Cambodia were killed, including many teachers. This resulted in a long-term legacy of high illiteracy. By the time the Khmer Rouge regime was abolished, approximately 40% of the population was illiterate. Cambodia's literacy rate has risen, bit by bit, since the regime was overthrown. It stood at 74% in 2009 (UNESCO Institute for Statistics).

These improvements include progress at primary school level, where gender disparities have been reduced. Although there is no universal right to education, since 2006 Cambodia has maintained a relatively high net enrolment rate in primary education of 98%, with an almost equal proportion of boys and girls. However, attendance at secondary school remains very low, with a net enrolment rate of only 38% recorded in 2008 (UNESCO Institute for Statistics). One key reason for this is the direct and indirect cost of education, which most parents cannot afford. This is compounded not only by a lack of quality in education, but also by a lack of access, especially in rural areas (UNICEF Cambodia).

The improved communication and access to information which mobile phones offer can have a significant impact on users' livelihoods, particularly among the most vulnerable and traditionally hard-to-reach learners. To this end, development organisations began to make use of mobile phones across a range of projects which have helped to reduce vulnerability, improve social empowerment, increase access to health and education services, and to create more and better businesses. In 2010 Oxfam GB and Women for Prosperity (WfP) established a pilot scheme, called Pink Phone, which provided mobile phones to women in or aspiring to leadership positions in their communities, including women commune councillors and women wishing to improve their livelihoods by becoming small producers, for example in farming, processing or trade. The aim was to use mobile technology to empower women

and so to support them in overcoming the hurdles they face in becoming agents of change in communities in which they have traditionally held subordinate roles.

PROGRAMME OVERVIEW

Pink Phone was launched as part of a wider programme to economically and politically empower women. It was structured on the model of WfP's Women for Leadership programme, in which women attend capacity-building training in order to prepare them for a position as a community leader and to enable them to influence the development and monitoring of public policy. Every Pink Phone participant also took part in WfP's Women's Economic Leadership programme.

Initially, the Pink Phone programme approached 45 female commune councillors from 14 districts within three provinces: Kampong Thom, Kratie, and Stung Treng. The aim was to raise understanding of why women need to involve themselves in Cambodia's economic development, and to demonstrate how economic independence can be a means of moving out of poverty, leading, in turn, to greater political empowerment.

In practical terms, the Pink Phone project aims to enable female commune councillors to access information and to improve their knowledge and communication skills through the use of mobile telephones. The women are usually already active in leadership roles, acting as «deputies» in their communities. The community deputy is the first point of contact for people in the community who have concerns about issues such as health, violence or primary school quality. She also functions as a leader and mediator between community members and government institutions such as health centres, schools and the police.

A pink mobile phone is given to each of the participating women. The phones, together with the capacity-building training, which improves their confidence and develops their leadership skills, help the councillors improve their communication with constituents as well as with other commune councillors and stakeholders outside their communities. It also enhances their ability to assist women producer groups in promoting their products and increasing their market power.

The councillors who participated in the programme have supported the development of other women leaders, leading to the programme's expansion. Mobile phones have now been given to business-



women to support them in building up their enterprises and in establishing healthy trading relations. As each community group works on different activities to generate income for their families, whether planting organic vegetables, food processing or farming chickens, the pink phone allows them to communicate with each other, sharing information on training schedules, market prices or weather reports, as well as with buyers.

WfP organized training sessions for the 45 women commune councillors, holding one in each of the three provinces. Each training session lasted two days. The instructors, drawn from WfP staff, gave support to women who struggled with technology in general and with mobile phones, in particular. A large billboard was used to explain the features of the phone, illustrating each and every key and its meaning and function. Participants learned the alphabet and how to use the keyboard, enabling them to use mobile phones with ease. The pink phones were specially programmed to allow SMS text messaging in the Khmer language.

Class presentations, role plays, brainstorming and facilitation, group discussions and games, were all used to encourage the active participation of the learners.

Pink was chosen as the colour of the phones to show that they belonged to the women and so that men would be deterred from using them. The decision was inspired by a project that provided pink bicycles for women to enable them to travel more easily. Moreover, in Cambodia pink is regarded as a symbol

of empowerment – an appropriate colour for a project aiming to support women to act as strong leaders in their communities.

Aims and Objectives

The main aim of the programme was to promote women's participation in public affairs.

Its objectives to achieve this were to:

- ✎ Develop the communication skills and knowledge of the women;
- ✎ Strengthen the leadership positions of women and promote their economic empowerment by supporting female commune councillors;
- ✎ Improve community livelihoods by building participants' capacity to be agents of economic change;
- ✎ Improve and accelerate efficient inter-communal communication to ensure important community services, for example school lessons, are provided smoothly; and
- ✎ Enable immediate interventions when problematic situations or emergencies occur, for example in cases of domestic violence.

PROGRAMME IMPLEMENTATION

Teaching and Learning: Approaches and Methodologies

The capability-building sessions are organised in the form of «train the trainers» workshops, with class presentations, role plays, brainstorming and facili-

tation, group discussions and games, to encourage the active involvement of participants.

Programme Content and Teaching Material

WfP provided capability-building workshops for 45 commune councillors, demonstrating how to use SMS text messaging in the Khmer language and providing each participant with a pink mobile phone. The workshops taught participants about the role and responsibility of facilitators, how to identify and categorise issues and how to develop strategies to resolve them. They also learned how to make reports, to ask questions and to develop their listening skills. Participants had the opportunity to share their experiences, to learn facilitation techniques and to participate actively in group discussions.

Participants were also taught how to conduct assessments of economic needs and preferences and how to analyse the results of these assessments. They acquired skills in writing concept papers and preparing budget plans, and learned how to assist village women in forming community groups and how to manage a community group. They also received training in writing project narratives and finance reports and guidance on how to seek assistance from relevant departments and stakeholders.

Recruitment and Training of Facilitators

The women who take part in the programme also participate in the WfP's Women's Economic Leadership programme, attending regular meetings with the other participants. The training of participants is provided by two members of WfP staff, funded by the WfP's wider programme supporting women's economic and political empowerment.

Enrolment of Learners

The female councillors were selected by Oxfam GB and WfP staff. Initially, 45 councillors from 45 communities in three different provinces received a pink phone. With the expansion of the programme, and the high demand from women working in leadership roles in their communities, women in other positions also received a phone. Oxfam GB continues to raise funds in order to provide more phones to women leaders.

Women participating in the programme must meet certain criteria. They must be proficient in the Khmer language, and should be in a leadership position or have leadership potential. There are no economic criteria – many of the participating women are poor – but they should be in position to coordinate work

among council members, the community, the police and other authorities. The women must be available around the clock to provide an immediate response when receiving a call. This is especially necessary at night, when it is difficult to leave the house to seek help in cases of emergency.

Participating women come from different political parties, from communities nearby and far away, and from provincial towns.

Assessment of Learning Outcomes

At the end of the training, each participant is asked to come to the front of the class and demonstrate how to use the phone, particularly how to use the letters on the keyboard and how to write and send SMS text messages. More advanced learners have the chance to help participants who have difficulty in memorizing the keys. This represents not only a great opportunity to learn the alphabet by using new technology, but also raises the self-esteem of participating women.

MONITORING AND EVALUATION OF THE PROGRAMME

For monitoring, a system was set up by WfP through which all participants receive daily SMS text messages from WfP staff. The women are required to answer the message, with their response appearing in the WfP system. Participants can, furthermore, send text messages to anyone else they wish. They must communicate by text at least three times each week. If a participant does not respond or responds less often than required, WfP will follow up with a phone call.

All participants meet twice each year to review the project, and three times each year, as part of WfP's Women's Economic Leadership programme.

PROGRAMME IMPACT AND CHALLENGES

The greatest achievements of the project include:

- ☞ Women leaders now own a pink phone, representing the network;
- ☞ Women leaders at grassroots level are able to communicate through SMS (two-way communication);
- ☞ Women leaders have improved their work performances, as well as their communication skills, are able to take action in a timely manner (reacting, for example, to issues of domestic violence, child birth or disaster warnings), and are informed about market prices, weather reports and so on;

- ✎ Women have begun to realize that technology is for everyone, and not just for men and young people;
- ✎ The pink phones have helped the women to develop processes for decision-making, for instance regarding work and time management; and
- ✎ The phones are saving women time, as they no longer have to cycle long distances to speak to other councillors or community members. This allows them to spend more time on monitoring different projects in the community.

The community values the programme, recognizing that the mobile phones make possible speedier interventions, thus strengthening the connection between community members and commune councillors. More efficient time management means the deputies have more time to monitor different projects in the community. This has resulted in a decline in crime rates and violence, as well as better access to health centres and improved primary education.

The pink phones also support women's livelihoods by providing them with current market prices of agricultural commodities or warnings concerning weather conditions, such as floods or storms. The phones are also helping support community members, especially women, for instance in intervening quickly in cases of domestic violence.

People, of course, use telephones primarily for verbal communication. However, because of the programme's monitoring system and the fact that text messages are perhaps safer when it comes to conducting business transactions, the project uses mostly written communication. This requires the women to improve their literacy skills by remembering the alphabet and using the keyboard. Participants report their pride at being up to date with new technology and say that it gives them confidence in their capabilities and reinforces other learning.

Because of these impacts and the positive feedback of participating women, the programme plans to expand, provided funding can be found.

Impact on Literacy Skills

Before they could learn to use a mobile phone, some of the women had to learn how to read and write Khmer. They were supported in this by the Women's Economic Leadership programme, but they also had to follow up their learning in their own time and on their own initiative.

Some of the women were taught how to read and write in Khmer with the use of the mobile device. A billboard was created to show the women how to operate the phone, with a section using Khmer characters. Photocopies of the billboard were printed out and distributed to participants so they could continue to practice them on their own. The use of modern technology in the learning proved a good way of engaging and encouraging the women to overcome their problems with literacy.

It is hoped that this work will raise awareness of the importance of literacy skills, not just for women but for all members of the community.

Economic Impacts

The Women's Economic Leadership programme has improved the employment prospects of many participants, including poor women with few resources, giving them the opportunity to work in leadership positions.

Women who have used the phones in their business have found it has helped them to expand and improve their trade networks. The information they receive each day on farm product prices means they know whether or not the price they are paying is fair. All participants receive the same information.

Impact on Primary Education

The phones help to assure the quality of community pre-school and primary school provision so that access to education is improved. Rather than travel to the schools to monitor performance, councillors can now connect with the teachers via phone, saving time which they can invest in other projects.

Impact on the Role of Women

The programme gives women the opportunity to step out of the traditional role of housewife and to become engaged in social and political issues. This has opened up a dialogue about gender roles and the support available for women in changing their traditional roles as well in connecting with other, like-minded women.

Since the programme began, the mobile phones have come to be seen as essential in participants' communities, sometimes leading to larger-scale, systemic changes in those communities. There is, for example, greater acceptance of the leadership role of women who were recognized for the role they

played in their communities and for the good working relations they had developed.

As a result, the women have become more self-confident. They are proud of what they have accomplished, as are their husbands and families. They have also gained the respect of male colleagues who have heard them report on their work at commune meetings. This newfound respect has, in turn, encouraged the women to work harder, to take more responsibility and to become more effective in their work. This benefits the community, as the women are better able to help men and women in need through effective communication.

Impact on the Community

The female councillors were able to build good, trusting relationships with individuals in their community, because their use of mobile phones enabled them to solve problems quickly. Trust is essential in building solidarity within a community and empowers people to develop sustainable solutions for everyday problems. One example is the decrease in domestic crime which resulted from a more efficient flow of communication. Before, victims could be reluctant to report domestic crime to their village chief, who, in most cases, would not take appropriate action. This is no longer an issue since most cases are now reported directly to female councillors. Neighbours are also reporting incidents to the deputy, who is able to inform the police immediately. Overall, the mobile phone has proved an important and time-efficient tool in increasing security within communities. It can help save people's lives, for instance through flood reports that help to evacuate villages faster or in getting immediate help for women in labour. Testimonials from commune chiefs, councillors and deputies acknowledge the success of the project.

Testimonials of Learners

The success of the pilot project shows that even small innovations in terms of communication can make a big difference and can even help to save lives. The impact of the programme is clear from the extent of the women's engagement and the work they have been able to do, all of which has led to them being more valued, both as women and as professionals. As the programme has developed, important benefits have emerged, including improved security, a better flow of information and enhanced access to health services. The use of the phones has also allowed well-organised monitoring, for example in the case of schools. Ham Pen, councillor of the Salavisay Commune, says: «This phone

helps me to connect myself with teachers of the pre-school, police, male colleagues in my commune. At village meetings, I am able to report to the commune chief if the teacher has not been going to work at the pre-school.»

The testimonials of the women reveal a positive impact on inter-community communication. The mobile phones are now regarded as vital to an improved connection between all members of a community:

The phone helps me to communicate better as a leader. It also allows me to lend support to people when I cannot be there to accompany them. Chea Kimhong, councillor, Andong Por Commune

The phone is invaluable, to myself and the community as a whole, because it brings us together and promotes increased communication within the community. Yem Im, First Deputy, Sreng Commune

CHALLENGES

Some of the women had difficulty participating actively in the Women's Economic Leadership programme, especially in the beginning when mobiles were yet to be distributed. The phones provided the women with an easier way to connect with each other, making aspects of their work easier, for instance organising meetings. This shows how useful the Pink Phone programme has been in supplementing the Women's Economic Leadership programme. Combining two programmes can increase the learning outcomes of both. The Pink Phone programme would not work as well without the preparation of a course on women's leadership. On the other hand, mobile phones proved highly efficient instruments to support the Women's Economic Leadership programme, enabling participants to arrange and take part in regular meetings.

As they progressed on the programme, the women were often confronted with difficult, unpredictable situations, which they had to deal with directly, with no outside support. Their lack of experience meant dealing with these problems could be tough. The pink phone enabled them to reach out and seek assistance from other women leaders who did have the experience and expertise.

Another difficulty was the conflict that was, at times, created within families by the challenge the programme posed to the traditional view of women as housewives and mothers.

Male leaders, especially male commune chiefs, welcomed the use of phones by female commune councilors, recognizing that it made their work much easier. Most female councillors are involved in the commune's committee for women and children, and organize numerous related activities. The pink phone helps to improve communication between colleagues, as well as with villagers and other stakeholders.

There were no reports of male colleagues demonstrating jealousy towards the women, either because they had been given a phone or because of the benefits they had gained from taking part in the programme. Typically, in Cambodia, only men own a phone, obliging women to borrow their husband's in order to communicate with others. Now that women also own mobiles, they can use them for their own benefit and for that of their community – something their male colleagues appreciate.

LESSONS LEARNED

Network Coordination

One important lesson is that the system of providing and receiving information via SMS requires oversight and follow-up where members are unresponsive. There must be an individual responsible for compiling the information, adding it to the system and sending out information to the members in the network. If questions arise a member can pose a query, which, in turn, can be answered by any member of the network. Where members do not respond, it is important that this is followed up and any issues addressed.

Language Barriers

To overcome language barriers, the pink phones were programmed in Khmer. The programme also opted for the phone provider with the best coverage in rural areas to ensure smoother communication. As all members use the same provider and, therefore, belong to the same phone network, costs are kept low.

Role of Women

The programme represents a good example of women's empowerment through the use of innovative technology in Southeast Asia. Women are equipped with an effective communication tool which enhances their authority and status, as well as improving their capacity at work. The use of mobile phones by women leaders can produce a shift in perception and can help challenge traditional think-

ing about gender roles. Instead of being regarded as incapable of holding leadership positions, women are recognized as strong actors in the community. The Pink Phone programme has made a significant contribution to the difficult process of changing gender roles and perceptions at personal, social, cultural and political levels in Cambodia.

Community Trust

The programme shows that well-developed communication is based on trust. As the testimonials show, trust has increased within the communities, particularly trust in community leaders. By making themselves available and responsive to the needs and demands of individuals, women leaders, councilors and heads of committee have developed strong relationships of trust within their communities.

SUSTAINABILITY

The Women's Economic Leadership programme has been running for a number of years now, which shows that its success is not short-term. Since the introduction of the Pink Phone programme in 2010 the leadership programme has become even more effective, with organisation among groups of women becoming much easier.

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INDIA

Reading for a Billion: Same Language Subtitling

COUNTRY PROFILE: INDIA

Population

1,210,193,422 (2011 census)

Poverty (population living on less than USD 1.25 per day)

42% (2005)

Official languages

Hindi and English

Total expenditure on education as % of GNP

4.1

Primary school net enrolment / attendance ratio (2005–2010)

95%

Primary school completion rate

90%

Total youth literacy rate (15 – 24 years, 2005 – 2010)

Female: 74%, Male: 88%, Total: 81%

Adult literacy rate (15 years and over, 2005 – 2010)

Female: 51%, Male: 75%, Total: 63%

Statistical Sources

UNESCO: EFA Global Monitoring

PROGRAMME OVERVIEW

Programme Title

Reading for a Billion: Same Language Subtitling

Implementing Organization

PlanetRead and IIM Ahmedabad

Language of Instruction

Hindi, Bengali, Gujarati, Punjabi, Tamil, Telugu, Kannada and Marathi

Funding

Short-term funding from Sir Ratan Tata Trust, Dell Giving, Development Marketplace (World Bank), Google Foundation, and Department of School Education and Literacy

Date of Inception

1999

CONTEXT AND BACKGROUND

India has a very long and rich history. Nevertheless, there had been very little progress in the world of adult education until the middle of the twentieth century. It was only after independence from the

British in 1947 that adult education instilled itself on a national level in India as a domain that was in need of collective help, restructuring, and positive change.

In the Census of 2001, the figures were rather encouraging with a literacy rate of 65 per cent, and with 95 per cent of the rural population within one kilometre of a primary school, granting almost every child access to his/her neighbouring school. This is a considerable accomplishment, but it is important to analyse this information critically. Does the fact that there is a primary school in the neighbourhood mean that the socioeconomic condition of children in India today allows them to go to that school? And if so, how many students are able to stay in school? These are questions that need to be addressed when speaking of literacy in India. The truth is that the census overestimates the literacy rate, since most people call themselves «literate» as soon as they have completed one year of schooling or learned to write their name. In fact, the quality of education that students receive generally is poor and the drop-out rate under 12 years is up to 50 per cent in some areas.

In another study independently commissioned by PlanetRead and conducted by Nielson's ORG-Centre for Social Research (with a sample of 23,000 individuals aged 7 and above, from five states) it showed that the literacy rate was at best 55 per cent with only 17 per cent being fully literate and 38 per cent «early-literate» meaning those with beginning alphabetic knowledge but who could not read a simple paragraph or a news heading in the newspaper. Therefore, India can be estimated to have 146 million fully-literate, 327 million early-literate, and 387 million non-literate people. With these figures in mind, it is obvious that the subject of literacy in India is still of great importance and in need of evaluation and more progress.

Role of the media

In a country like India where there are over a billion people, the role of the mass media can be both a tool for motivation but also an approach to prompt effective literacy practices. Using song-based programmes to expose viewers to reading on a con-



stant basis makes reading automatic and an enjoyable process. The biggest strength of this project is that it creates reading transactions on a mass scale at a fraction of the cost. In addition, song-based programmes provide an endless resource to build phonemic awareness.

The radio is another medium that can be used to creatively advance literacy. There could be a radio emission that reads the newspaper on the air while listeners follow along with the text. This is just one idea of how mass media can be used in a productive and efficient manner to improve the lives of citizens and create learning opportunities for a wide audience.

READING FOR A BILLION: SAME LANGUAGE SUBTITLING (SLS)

Same Language Subtitling (SLS) was originally created for the hearing impaired. It wasn't until the late 1990s that SLS was combined with popular culture on TV to deliver reading practice in an easy and fun way. The idea is to subtitle music videos and songs from movies on television in the same language as the audio track so that the subtitles pass on the screen at the same time as the audio. Extensive feedback was gathered from 1996–1998, and it was clear that viewers liked the idea of reading along, mainly because it allowed them to sing along and learn the lyrics to their favourite songs. By 1999, SLS

was put into practice, for the first time on Gujarat state TV, on a weekly half-hour programme of film songs. In 2002–2003 the SLS project got a grant from the Development Marketplace (World Bank), making it possible to extend SLS on «Chitrahaar» and «Rangoli» TV programmes, which broadcast Hindi film songs across the country.

PROJECT IMPLEMENTATION: APPROACHES AND METHODS

The idea behind this project is to subtitle as many public access television channels in India in the same language as the audio so that viewers can read along with the soundtrack. In 2006, with support from the Google Foundation, SLS was implemented on ten TV channels with subtitles in ten different languages. This diversity allows people to benefit from reading in their mother tongues.

Target group

The SLS project targets the 300 million early-literate population in India with access to television. Early literates are a prime target because there is the fear that they will not put their skills to use and therefore, over time, lose them. SLS offers people the option to use their reading skills on a daily basis. The SLS programme benefits women in particular as they represent a large segment of the early literates. In addition, it is an extremely simple and economical



approach to improving literacy skills among all age groups. Since 1999, the project has expanded and has SLS on ten weekly programmes on the national/state broadcaster.

Project Objective

The main goal of the SLS project is to transition early-literates to functional literates through lifelong reading practice and to raise the literacy rate, in general, in India. In a world where literacy is of growing importance, this project offers a simple and successful way to reach this goal by giving individuals better access to reading practice through film songs they enjoy. Bollywood songs are a major source of affordable entertainment in India and therefore are a main resource for the SLS project.

With India expected to be the most populous country by 2015, it is imperative that the people are educated and literate in order that they can play an active role in society and participate in the workforce.

IMPACT AND CHALLENGES

Based on several research studies, including independent studies, it can now be said that regular exposure to SLS:

- more than halves the percentage of school-going children who remain non-literate even after five years of schooling
- doubles the percentage of functional readers among school children halves the percentage of adults and children experiencing skills loss and substantially increases the percentage of people experiencing skills gain
- leads to 25–30 per cent more people reading newspapers.

The passion for Bollywood songs and interest in learning the lyrics to these songs has motivated people to watch programmes where SLS is available. Being able to sing along to the songs has proved to be a very effective way to get people reading on a daily basis. SLS allows struggling readers to experience frequent moments of success in the course of their reading experience when they try to follow along with the songs.

While the funding needs of SLS are minimal, the programme has not succeeded in developing a steady source of financial support because the project has not yet made the transition from «project» to «policy». As a consequence, the project tends to have a prospect of not more than a year at a time.

SUSTAINABILITY

PlanetRead's sustainability strategy is to effect policy change in India so that SLS becomes mandatory on ALL song-based TV programming, in all languages, at least on the public service broadcaster. This will automatically require a fund allocation. In order to accelerate policy change and provide a context for a policy dialogue, PlanetRead aims to maintain SLS on ten weekly TV programmes in as many languages. PlanetRead has been in a dialogue with the Ministries of Information and Broadcasting and the Human Resource Development, to accept and scale up SLS in India on all song-based programming.

Since this project has been such a great success in India, PlanetRead plans to expand their work in other countries, especially in Africa, South Asia and Latin America, where music videos are popular and reading levels are low. It is a very cost-effective way to make reading fun and accessible and therefore shows promise in India and throughout the developing world.

LESSONS LEARNED

- ✎ The SLS project needs to win over the minds of policy makers and national agencies working for literacy in order to secure this programme as effective and beneficial to the viewers.
- ✎ Although the impact on children and young adults is greater, weak-reading adults benefit from the SLS project as well. After five years, 12 per cent of adult viewers became good readers after exposure to SLS while only three per cent became good readers among those who did not watch SLS programmes.
- ✎ Among early-literate adults, the age group that benefited the most from the project was 15–24-year-olds.
- ✎ To promote literacy, one needs to create an environment for learning that is mindful to print exposure.
- ✎ There is a need to improve print exposure in everyday life so that emergent skills are constantly challenged, used and cultivated.
- ✎ With only one 30-minute programme per week, exposure to print is limited. Exposure to reading is best when done on a steady long-term basis, therefore this project would benefit immensely from more on-air programming.

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MONGOLIA

Literacy through Distance Learning

COUNTRY PROFILE

Population

2,951,786 (2007 estimate)

Official Language

Mongolian (other recognised languages: Turkic, Russian, Chinese)

Poverty (Population living on less than USD 1 per day)

27.0% (1990-2004)

Total Expenditure on Education as % of GNP

5.4%

Access to Primary Education – Total Net Intake Rate (NIR)

97% (2006)

Adult Literacy Rate (15 years and over, 1995-2005)

Total: 98%, Male: 98%, Female: 98%

Total Youth Literacy Rate (15-24 years)

98% (1995-2004)

Sources

UNESCO: EFA Global Monitoring Report 2008, UNICEF: Info by Country, World Bank: World Development Indicators database, Sep. 2008

PROGRAMME OVERVIEW

Programme Title

Literacy Through Distance Learning

Implementing Organization

National Centre for Non-Formal and Distance Education (NCFNDE), under the Ministry of Education, Culture and Science (MoECS)

Language of Instruction

Mongolian

Programme Partners

UNESCO

Date of Inception

2004

CONTEXT AND BACKGROUND

Since the mid-1990s, Mongolia has transformed its education system as the country has moved from a centralised, one-party state to a market economy and multi-party system of governance. Following a sharp decline in educational opportunities, standards and literacy rates during the transi-

tion, the Mongolian government has, with support from international organizations such as the Asian Development Bank (ADB), implemented major policies to restructure and rehabilitate the education system. In particular, the government has introduced laws which guarantee free and compulsory education for all children under the age of 16. In addition, it has increased funding for schools development, resources procurement, human resources development and adult non-formal education programmes. By 2005, as a result of these reforms, primary school enrolment/attendance had peaked at near-universal rates (97%), while total youth and adult literacy rates were similarly high (98%).

Nevertheless, access to education for rural and predominantly nomadic people in remote areas remains restricted. School enrolment rates are therefore substantially lower in these areas, and drop-out rates are relatively high. In 2005, for example, it was estimated that enrolment in most rural schools was below 80%, with more than 20% of primary school children subsequently dropping out of school. This lack of access to education can be attributed to a number of socio-economic factors, including:

- ✎ limited state funding for rural schools, most of which consequently lack adequate amenities (e.g. heating and boarding facilities to cater for nomadic children);
- ✎ local modes of production (rural Mongolians are predominantly nomadic herders and as such, education is of little value to their socio-economic life; as a result, many children particularly boys, drop out of school in order to assist their parents, with some studies suggesting that boys account for only 40% of enrolment in upper secondary education); and
- ✎ a lack of public awareness regarding the laws which require all children under the age of 16 to attend school.

Overall, despite the sweeping reforms, more than 15,000 children are out of school and still more adult Mongolians are illiterate or semi-illiterate due to missed educational opportunities during the transition to democracy. Needless to say, adults with low



levels literacy are less able to help their children and increase household income due to their limited ability to function efficiently within a market economy. The National Centre for Non-Formal and Distance Education therefore took steps to improve marginalised people's access to quality education by initiating the Literacy Through Distance Learning Programme (LTDLP) in an effort to combat illiteracy and to promote the development of practical livelihoods skills. LTDLP uses the family as the basic unit of learning and thus promotes intergenerational learning.

THE LITERACY THROUGH DISTANCE LEARNING PROGRAMME (LTDLP)

LTDLP provides basic and advanced literacy skills training to out-of-school youth and illiterate or semi-illiterate youth and adults through distance education. The programme has been implemented in 12 of the country's 21 aimags (provinces), namely Bayan-Ulgii, Khovd, Uvs, Zavkhan, Bayan-Khongor, Sukhbaatar, Tuv, Umnugobi, Dundgobi, Dornogobi, Khentii and Gobi-Altai. It benefit 3,500 illiterates and 4,500 semi-literates per year.

The programme employs an intergenerational approach to literacy skills training and learning and thus focuses on the learning needs of entire families. The approach is furthermore designed to foster a positive attitude towards learning and to enable parents and their children to assist one another in the learning process. The programme encompasses a range of themes including: health (preventive measures and HIV/AIDS, nutrition and hygiene); literacy for economic self-sufficiency and community/rural development; and ICT skills training.

Aims and Objectives

LTDLP endeavours to:

- ✎ combat illiteracy, particularly among rural-based

nomadic families, through intergenerational learning within the perspective of lifelong learning;

- ✎ foster the development of functional literacy skills among marginalised people to enable them to function effectively and competitively in a market economy;
- ✎ facilitate family learning in order to promote sustainable community development, income generation and poverty alleviation, as well as to improve general standards of living;
- ✎ promote community capacity-building in order to enable communities to address health, developmental and environmental challenges effectively;
- ✎ break information/communication barriers through ICT skills training; and
- ✎ use literacy and life skills training to foster values and a sense of social responsibility, thereby equipping people to combat social problems such as the spread of HIV/AIDS, drug abuse and environmental degradation.

PROGRAMME IMPLEMENTATION: APPROACHES AND METHODOLOGIES

The programme employs about 115 facilitators to offer literacy training to participants. NFE facilitators have been recruited to offer specific training to out-of-school children, youths and illiterate adults. Learners are selected on the basis of a needs assessment survey aimed primarily at school-age children and youths, which can also be taken voluntarily by adults. Before being deployed, facilitators receive professional training in, for example, adult literacy teaching methodologies and multi-grade teaching strategies for conducting classes attended by a range of age groups and learners with varying levels of literacy. This is intended to enable facilitators to conduct their lessons professionally and efficiently. Each facilitator is then assigned a relatively small group of learners, ranging in size from 20 to 30, in order to ensure effective and personalised teach-



ing and learning. During the face-to-face training period, programme facilitators receive about USD 45 per month and also receive some remuneration for supporting distance learning.

The project is implemented in two main stages. The first stage involves a range of activities including: conducting a baseline/needs assessment survey; developing learning materials (books, audio-visuals); and mobilising and training literacy facilitators. The second stage of the project focuses on face-to-face and post literacy training: Image

Face-to-face teaching: this strategy is a basic literacy approach primarily used in teaching illiterate learners. The approach uses the same teaching methods and materials as the distance learning approach (see below); however, learning takes place in the presence of trained facilitators. Face-to-face lessons are usually conducted at National Centres for Non-Formal and Distance Education (NCNFDEs), which are located at the *bagh* (i.e. the smallest administrative unit in Mongolia). Face-to-face training lasts a total of 20-30 days.

Distance learning: this strategy is a post-literacy approach for semi-literate learners that emphasises life skills and relies predominantly on distance or self-learning, involving minimal support from the facilitator. Distance learning caters for learners whose basic literacy skills enable them to continue studying either on their own or with assistance from family members. It is designed to promote independent and family-based lifelong learning. As such, the main role of the NCNFDE is to provide learners with learning materials (books, CDs) and mobile facilitators who monitor their learning progress and offer more personalised assistance when and where necessary. This strategy is particularly suitable for nomadic families as it enables facilitators to continue monitoring their learning progress without disrupting their way of life. Complementary lessons

using ICTs (radio, video-CDs, DVDs) are also provided. Distance learning training takes place over a period of two months.

The following basic teaching-learning materials have been developed, produced and used in both the distance and face-to-face learning strategies:

- ✎ Three literacy textbooks for illiterate and semi-illiterate youths and adults (basic, intermediate and advanced levels), two of which have been copied to audio cassettes and CDs.
- ✎ Nine textbooks for post-literacy programmes.
- ✎ Seven video lessons lasting a total of 101 minutes (1000 copies).
- ✎ Ten radio lessons lasting 15 minutes each aired nationwide and copied to audio cassettes for distribution to distance learners.

PROJECT IMPACT AND CHALLENGES

Facilitators and internal NCNFDE experts monitor the programme on an ongoing basis. In addition, external professionals have been engaged to conduct a qualitative evaluation of the programme in all twelve of the provinces in which it has been implemented. These processes have revealed a number of achievements, lessons and challenges encountered during the implementation of the programme.

Impact and Achievements

Since its inception in 2004, the programme has succeeded in providing literacy skills training to 3,500 illiterate and 4,500 semi-illiterate people each year, thus improving literacy levels among marginalised people.

Family-based literacy training has fostered the development of positive social relationships and communication patterns between parents and their children. This has also motivated parents to ensure

that their children attend and stay in school. *The teaching-learning materials developed by the programme are now being widely distributed and used by other actors implementing literacy programmes in the country.

Literacy training has improved standards of living as learners are using their newly-acquired skills for self-development and to secure their livelihoods.

Challenges

In general, literacy education in Mongolia receives insufficient support from official sources. As a result, the public is unaware of the importance of literacy in their lives. Literacy has been neglected in part due to the widespread belief that the country had, by the late 1970s, eradicated illiteracy and that there was therefore no need to pay particular attention to the provision of non-formal education (NFE). Hence, despite the fact that distance education is a cost-effective means of promoting literacy skills and life-long learning, the lack of adequate resources – in particular teaching-learning materials, vehicles to travel to remote nomadic villages and poor salaries for facilitators – have hindered the effective implementation of LTDEP. This has also compromised the quality of the programme's outcomes as well as its overall outreach. In light of this, there is a critical need to secure sustainable funding.

Furthermore, participants' nomadic lifestyle also increases implementation costs as facilitators are obliged to schedule the programme in line with seasonal migratory systems. Apart from the additional cost these systems of migration entail, they also make it impossible to offer literacy training on a consistent and long-term basis.

SUSTAINABILITY

Although illiteracy rates in Mongolia are relatively low, the demand for distance learning remains high, particularly among rural populations whose access to formal education continues to be limited. The support and commitment of the local government is therefore needed to ensure that literacy programmes reach out to the needy on a long-term basis.

In addition, the programme has trained a network of facilitators and developed a wide range of literacy teaching-learning materials. These human and material resources form a strong basis for the sustainable implementation of literacy skills training programmes. This is already self-evident, as some NGOs, such as World Vision and Adventist

Development and Relief Agency International (ADRA), have adopted and are currently using teaching-learning materials developed by the NCFDEs.

LESSONS LEARNED

For literacy programmes to be successful and sustainable, key actors (government authorities, schools, NGOs and civil society) must be encouraged to participate and cooperate actively in the formulation, development and implementation of the programme. For example, without the support of parents and civil society, it is often difficult to prevent families from taking their children out of (formal or non-formal) education programmes so that they can help with herding and other subsistence activities. Similarly, governmental and NGO support is critical to ensure sustainable financial and technical support.

Despite encountering numerous challenges (e.g. how to balance livelihood activities with attending literacy classes), learners are generally very motivated because most recognise the importance of education in modern life. Hence, the successful provision of basic literacy skills generates further interest in acquiring functional literacy skills. Efforts should therefore be made to ensure that learning is transformed into a lifelong process.

Family-based literacy training provides a conducive environment for sustainable learning.

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PAKISTAN

Mobile-based Post Literacy Programme



COUNTRY PROFILE

Population

173,593,000 (2010)

Official Languages

Urdu, Pashto, English, Punjabi, Sindhi, Balochi

Poverty (Population living on less than USD 1.25 per day)

23%

Total Expenditure on Education as % of GNP

9.9% (2010)

Access to Primary Education – Total Net Intake Rate (NIR)

92% (2007)

Total Youth Literacy Rate (15-24 years)

Total: 71%, Male: 79%, Female: 62%

Adult Literacy Rate (15 years and over, 2010 - 2011)

Total: 55%, Male: 67%, Female: 42%

Statistical Sources

Pakistan Social and Living Standards Measurement

Survey (PSLM) 2010–2011, UNESCO: EFA Global Monitoring Report, UNESCO: Country and Regional Profiles, UNICEF: Information by Country, World Bank: World Development Indicators database

PROGRAMME OVERVIEW

Programme Title

Mobile-Based Post Literacy Programme

Implementing Organization

UNESCO Islamabad

Language of Instruction

Urdu

Programme Partners

Punjab Department of Literacy and Non-Formal Basic Education, Lahore; BUNYAD Foundation, Lahore; Dhaka Ahsania Mission Pakistan, Islamabad; Mobilink Pakistan; Nokia Pakistan

Date of Inception

2009

BACKGROUND AND CONTEXT

Gender disparity in literacy is one of the issues many countries face today. According to Pakistan's recent national survey (PSLM, 2010-2011) the adult Pakistani literacy rate is 67% for males and 42% for females, showing a significant gender gap. One of the reasons for the low literacy rate is that there is no appropriate opportunity for newly literates, who have completed a basic literacy course to practice their literacy skills, and then relapse into illiteracy. The available literacy materials are not well adapted to their daily lives in terms of content and interests, and newly literates experience difficulty retaining their interest in reading. Constant acts of reading are required to retain and develop newly acquired literacy skills; it is therefore imperative to provide support to keep their interest in literacy and to maintain their regular daily practice of reading. In 2009, facing this challenge, UNESCO Islamabad, BUNYAD Foundation (an NGO) and Mobilink Pakistan (a mobile phone company) came together to implement a project entitled «Mobile-Based Post-Literacy Programme» to address the literacy retention problem of newly literates, specifically young and adult females. The piloting phase and the second phase of the project demonstrated significant benefits through the use of mobile phones. The project is currently in its third phase (March–August 2012). It has been scaled up by acquiring more partners, namely the Punjab Department of Literacy and Non-Formal Basic Education, Lahore; Dhaka Ahsania Mission Pakistan, Islamabad; and Nokia Pakistan.

Aims and Objectives

The main objective of the project is to develop a mobile-based literacy programme where the newly literates receive literacy materials as messages on a mobile phone, which they read and then respond to. This programme is designed not only to provide appropriate reading materials to learners in order to maintain and develop their literacy skills through a medium which has become an indispensable means of communication among youths today, but also to promote knowledge concerning many aspects of life and to teach learners about and familiarise them with technological advancements.

The rationales of the programme

Among young adults in Pakistan, mobile phones have become an important means of accessing information, communication and learning. Mobile phones, therefore, would make a good medium for newly literates to sustain their interests in reading and writing. Mobile phones, which are provided by

the programme, become the property of the learners at the end of programme.

The programme is compatible with existing basic literacy programmes in that it includes two months of basic literacy coursework. The learners, having gained some level of literacy through the course, are then provided with mobile phones in order to retain and develop their newly acquired skills.

Sending e-mail messages and monitoring learners' participation in the mobile-based literacy programme only requires a simple web-based system and it is cost-effective.

PROGRAMME IMPLEMENTATION: APPROACHES AND METHODOLOGIES

A baseline survey is conducted in order to identify the areas where at least 25 female adults are either illiterate or have only basic literacy skills. Community leaders, families and female members of the community are sensitised through meetings which provide information about the advantages and disadvantages of mobile phones and the content of the messages learners would receive on a mobile phone. Village Education Committees are formed and they select the site for the establishment of the literacy centres and identify facilitators in their communities. Village Education Committees are also in charge of management of the literacy centres. Facilitators are then trained in pedagogical methodologies.

Young and adult women aged 15–30 with no or limited literacy skills participate in the programme. The learners are tested to determine the level of their understanding of simple sentences and maths problems before they begin the literacy programme.

LITERACY PROGRAMME

The duration of the programme is six months. The programme is divided into two stages: The first stage lasts two months. During this stage, learners attend a basic literacy course at a community literacy centre which meets two to three hours per day and six days a week. They learn to write the alphabet and to read with emphasis on phonics. Recently, computers and the Internet were introduced in the basic literacy course, and learners also use UNESCO's interactive DVD *Becoming literate*.

For the second stage, following the two-month basic literacy course, the mobile-based literacy programme begins. Learners are provided with free mobile phones. Originally over 600 messages were developed on 17 different topics for the mobile-



based programme. The topics include Islamic teaching, numeracy, health, general knowledge, local government, beauty tips, food recipes, jokes and riddles. Then additional 200 messages were created on topics such as disaster risk management, the economy, the right to free compulsory education, cultural diversity, the culture of Pakistan, the culture of peace, human rights, rights of persons with disabilities, freedom of expression, and the voting process. The BUNYAD head office initially sent simple religious messages and then moved on to messages which address other topics. Learners receive short message service (SMS) on their mobile phones 6–8 times a day. They are instructed to read them, practise writing them in their workbooks, and answer questions. Simple maths is also taught using the calculator function on the mobile phones. Recently, Nokia Pakistan equipped mobile phones with uploaded contents of UNESCO’s interactive DVD through a software application called «e-Taleem App» (e-Education App). The mobile phone, therefore, has also become also a direct medium for literacy learning.

Monitoring

Monitoring the learners’ participation in the mobile-based programme is done by the web-based system which is used to send text messages to the learners. In addition, newly literates respond to questions/multiple-choice-questions (MCQs) or tests sent by SMS, and the results of these tests are summarised and recorded in the web-based system. Learners

also report to literacy centres on regular bases. A monthly exam is given to learners at learning centres to track their retention rate and the development of their literacy skills.

ROLES OF THE PARTNERS

Each of the partners’ main roles are described below:

UNESCO Islamabad

Overall execution, implementation, monitoring and evaluation of the programme; assessment of each learner’s progress; providing textbooks, mobile phones and computers; providing facilitators’ salaries.

BUNYAD foundation; Punjab Department of Literacy and Non-Formal Basic Education, Lahore; and Dhaka Ahsania Mission Pakistan, Islamabad

Provision of needs assessments, mobilisation of the community and families, provision of basic literacy courses and facilitator training, SMS message delivery, learner support after the completion of programme.

Mobilink Pakistan

Provides (1) free SIM cards and SMS services for four months for 2,500 learners, (2) the free web-based software which allows sending and receiving SMS



messages and (3) the back-end server which collects learners' responses to the MCQs.

Nokia Pakistan

Development of the software/application, installation of the software/application in the mobile phones.

IMPACT

Pilot Phase (2009)

Ten literacy centres were established in three districts of the Punjab province and 250 learners completed the programme. Remarkable results were found regarding learners' achievements during the mobile-based programme. For example, at one of the districts, Sialkot, the test results from the first month of the mobile-based programme showed that 90% of the learners were in the 0–50% range and none made it to the 70–100% range; however, results from the last month of the programme indicated only 14% of the learners fell into the 0–50% range and 39% of the learners reached the 70–100% range, showing a clear benefit of the mobile phone programme. The complete results on learners' achievement in the district of Sialkot are found below:

Second Phase (April–September 2010)

After the success of the pilot phase, 50 literacy centres were established in the rural areas of 4 districts

of Punjab, where 1,250 learners participated. During this phase, again, a notable improvement in learners' literacy skills was found.

Reports and learners' testimonials from the first two phases

It was reported that learners were satisfied with the effectiveness of this programme. They have become more confident about themselves. They learned how to read, write and solve small money problems through calculations. Learners can now read the Urdu newspaper, signboards and simple Urdu books. They can also understand the Holy Quran via its Urdu translation. Learners reported exchanging messages among fellow learners. The programme appears to have left a very deep impact on the lives of all who are connected with one another through this programme. Learners shared information and lessons with family members, and sometimes they brought their daughters to the literacy centres. Below are selected learners' testimonials:

«It had been difficult for me to join a school to get formal education, but through this diverse way of learning it has become very easy for me as it is less time-consuming. I have developed great interest in my learning so I don't miss a day of my classes. Although my brother is against my going to the classes I still go there because of my mother's and teacher's support. I have also gained a lot of confidence.»

«I would like to say thanks to UNESCO and BUNYAD for enabling us. Before joining this programme I did not know how to read and write but now I have come to know how to read and write. We come to know about many useful things through the messages sent to us by the head office. We want that other programmes like this should be started also to help us further.»

«We have not only learnt how to read and write but have also come to know about other uses of cell phones e.g. setting the alarm, setting the reminders and having a record of our contacts.»

(Note: the above was translated from Urdu to English).

Third Phase (March–August 2012)

Following the success of the second phase, additional partners joined the project: (1) Dhaka Ahsania Mission Pakistan, Islamabad; and (2) a public sector organisation, the Punjab Department of Literacy and Non-Formal Basic Education, Lahore. Fifty additional literacy centres were established in the Punjab province in collaboration with the BUNYAD Foundation; twenty in the Khyber-Pakhtunkhwa province in collaboration with Dhaka Ahsania Mission Pakistan,

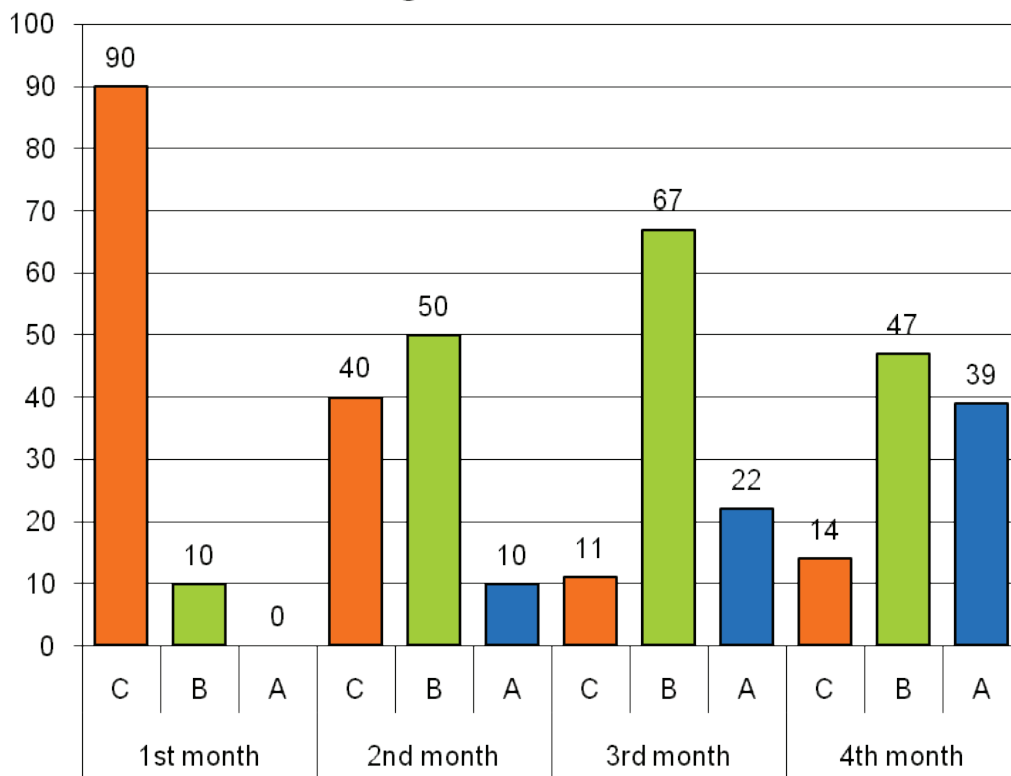
Islamabad; and thirty in the South Punjab province in collaboration with Punjab Department of Literacy and Non-Formal Basic Education, Lahore. An additional 2,500 learners are expected to complete the programme by the end of this phase.

CHALLENGES AND LESSON LEARNT

Religious and cultural constraints and the authoritative attitude of males keep females from receiving education. As far as this particular programme is concerned, family members – especially males – were initially very negative and hostile when they were approached to allow their young female family members to participate in the programme. They strongly disagreed with the idea of giving mobile phones to young women and doubted the effectiveness of the programme’s approach. In order to overcome this problem, the trust the community had in the BUNYAD Foundation, a local NGO partner, was a great source of help.

The security situation in the country is deteriorating, and extremist opposition against women’s education makes it difficult for women to receive education.

Learning Achievement in Sialkot





Learners found typing messages on mobile phones difficult and time-consuming. However, with extensive month-long training by the facilitators, learners learned to type comfortably in Urdu.

SUSTAINABILITY

Right from the inception of the programme, communities were mobilised through Village Education Committees which were involved in the planning, execution and evaluation phases of the programme. This developed a sense of ownership amongst the communities and all other stakeholders. It is believed that this community involvement will play a key factor in the sustainability of the programme.

At the end of the six-month programme, the mobile phones become personal property of the learners. They can continue receiving SMS messages for another six months and learners can also use the mobile phones to continue communicating with each other.

The Village Education Committee will continue its work as an administrative body and will be responsible for mobilising funds for meeting the running cost of the literacy centres. The implementing partners will provide technical assistance such as sending SMS messages for another six months and providing occasional computer training to facilitators and learners, even after the project phases out. Supervision and monitoring of the literacy centres

will be ensured on regular basis by the implementing partners.

The SMS messages developed under the project can be adopted by the mobile phone companies and can be sent to people in Pakistan on a wider scale. Media campaigns on literacy by the mobile phone companies may create an enabling environment to achieve UNESCO's Education For All (EFA) goals in Pakistan.

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Community-based Radio Network for Development and Learning



COUNTRY PROFILE:

Population

561,200 (2013, World Bank)

Official language

English (spoken by between 1% and 2% of the population)

Other languages

Melanesian pidgin (the lingua franca for much of the country), and 120 local languages

PROGRAMME KEY INFORMATION

Programme title

Community-based radio network for development and learning

Language of instruction

Melanesian pidgin

Date of inception

2006

Programme partners

Isabel Province Government, the Ministry of

Community Affairs, the People First Network, the United Nations Development Programme, and the Commonwealth of Learning

Funding

The programme is jointly funded by the following national and international donors: the Isabel Provincial Government; the Isabel Provincial Development Programme; the People First Network; the United Nations Development Programme (which supported the initial establishment of stations); the Commonwealth of Learning (which supplied capacity building for educational programming as part of the Healthy Communities project); and the Regional Assistance Mission to Solomon Islands (which supplied digital media equipment).

COUNTRY CONTEXT AND BACKGROUND

The Solomon Islands is a nation of half a million people scattered over 28,400 square kilometers of land in the southwest Pacific Ocean. The chain of

islands spans 1,400 kilometers, from Bougainville in Papua New Guinea to the northwestern border of the Republic of Vanuatu. More than 90% of the country’s inhabitants are ethnic Melanesians, with the remainder of the population comprising Polynesians, Micronesians, Europeans and Chinese (UNESCO, 2000).

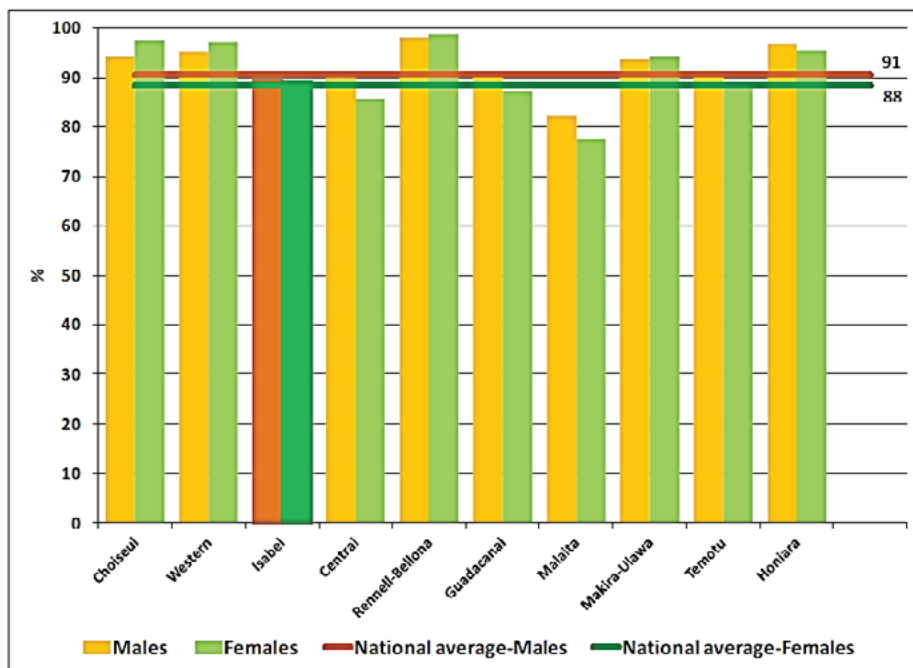
A former British protectorate, the Solomon Islands became an independent country in 1978 (WHO, 2012). Since achieving independence, however, it has struggled to develop and remains on the United Nations’ list of the world’s least developed countries. The vast majority of the population (85%) live in rural areas and survive through subsistence farming. More than half of all paid employment is concentrated in and around the capital, Honiara.

Between 1999 and 2002, life in the Solomon Islands was severely disrupted by a breakdown in law and order, which was only restored after the intervention of an international peacekeeping force. The Regional Assistance Mission to Solomon Islands, a coalition of countries from the Pacific region led by Australia, in partnership with the Solomon Islands government, began to lay the foundations for long-term stability, security and prosperity in mid-2003. Political turmoil in the country has, however, continued to weaken the education system, resulting in alarmingly low literacy rates, poor educational quality, and falling school attendance. According to data collected by

the Asia-South Pacific Bureau of Adult Education (ASPBAE), the islands remain some way from achieving the Education for All goals. While around 84.9% of islanders acknowledge the importance of literacy skills, only 17% of respondents to the ASPBAE educational experience survey considered themselves literate (ASPBAE, 2007). The problem goes beyond simply being able to read and write. Research shows that poor literacy impacts negatively on financial wellbeing, traps families in poverty, excludes people from decision-making, and reduces their ability to participate in politics and other activities that support the wellbeing of their families and communities (ABC Life Literacy Canada).

The population of the Solomon Islands grew by an average of 3.4% each year between 1970 and 1986, and continues to increase rapidly. This trend has, however, corresponded with growing disadvantage for some parts of the population, particularly young people. The net enrolment rate for secondary school in the islands is 48.4% (UIS, 2012), which means that more than half of all young people do not participate in secondary education. Employment opportunities for young people are also diminishing. It is estimated that of the 7,500 young people who enter the workforce each year, only one in six find paid employment (WHO, 2012). Acquiring the skills necessary for employment is a serious concern for many (ibid.), with poor literacy among the main causes of unemployment. It is obvious that development pro-

Figure 33: Literacy rate of the population aged 15-24 years by sex and province (%), Solomon Islands: 2009



grammes need to improve the literacy skills of young people, and help them develop other skills useful in gaining employment.

Isabel Province

Covering more than 4,000 square kilometers, with vast natural resources, the Isabel Province is home to more than 26,000 people (Solomon Islands government data, 2009). The land is mostly rugged and mountainous. Only 2.3% is classed as suitable for agriculture (Solomon Islands government, 2009). Traditionally, land ownership is determined by matrilineal descent. English is the official administrative language, but it is spoken confidently only by the educated class. The rest of the population speaks Melanesian pidgin. There are also eight distinct local languages in Isabel: Gao, Bugotu, Cheke Holo, Zabana, Kokota, Zazao, Blablanga and Laghu.

Literacy rates in Isabel are estimated by the provincial government using census-based self-declaration. A question on the census form asks people whether they can read and write a simple sentence in either English, pidgin, or a local language. This led the provincial government to report the literacy rate in Isabel to be approximately 90%, as shown in the graph below (*ibid.*). In contrast, ASPBAE estimates the national literacy rate to be around 17% (ASPBAE, 2007). Unlike the census-based method, which relies on self-declaration, ASPBAE uses direct, test-based assessment, which would appear more reliable (ASPBAE, 2007). Whatever the exact literacy rate, it is clear that the islands face a major challenge in tackling poor literacy among a large portion of its population.

PROGRAMME OVERVIEW

The development of community media in the Solomon Islands can be traced back to 2004. There was growing appreciation of the potential role of radio stations in supporting local governance and facilitating greater community participation and accountability. The United Nations Development Programme (UNDP) and the Isabel Provincial Government (IPG) established eight low-power FM radio stations around the province as part of the Isabel Provincial Development Programme (IPDP). The aim was to support the growing role of governance institutions in provincial development planning and to improve communication between these institutions and the islanders. Poor infrastructure has been one of the main factors inhibiting effective two-way communication in the Solomon Islands. The problem is particularly acute in remote and mountainous areas such as Isabel. For that reason,

the radio stations were set up in remote villages to allow greater sharing of information and the development of local content by host communities. The People First Network (PFnet) provided high-frequency radio email stations, co-located with the radio stations installed and managed by the IPDP. These facilities became known as community information centres. PFnet was involved in the operation of the email stations until the IPDP initiative ended in December 2007, after which the stations were operated by their local communities.

The Commonwealth of Learning (COL), an inter-governmental organization which encourages the development and sharing of open and distance learning resources and expertise, began working with the IPG, as part of its Learning4Peace programme, in 2009. In 2010, the COL proposed building on this growing partnership by involving the IPG in its Healthy Communities programme. This led directly to the piloting in Isabel of the Community Learning Programme (CLP), which used broadcast media as a vehicle for non-formal learning on priority health issues. Four radio stations in Isabel participated, identifying priority health issues and developing a series of radio programmes to address them, with capacity building and support from the COL and their local partners, including the PFnet and Solomon Islands Development Trust (SIDT), lead partners in what became known as the Isabel Learning Network.

The Healthy Communities programme aims to work with the provincial government and the radio stations to build the skills and knowledge necessary for the development of new programmes and content. This can include the development of basic literacy skills, by embedding this into the radio curriculum. The COL offers support to communities in developing their capabilities and strengthening their governance and sustainability, while providing the training the local stations need in order to manage their own programmes. Healthy Communities strives to create more opportunities for people to learn locally about community health and development. The COL's focus is on capacity building. As the network progresses, the intention is to introduce more basic literacy elements to the curriculum so that local ownership can be strengthened.

Aims and Objectives

The network's main aims included:

- ✎ Encouraging community ownership of learners' education;

- ✎ Empowering learners to develop and participate in local governance structures;
- ✎ Providing entertaining, informative, and educational programming on a modest scale;
- ✎ Creating a platform from which to raise awareness and involve local people in social change;
- ✎ Promoting the voices of women, young people and the community within the provincial and national context; and
- ✎ Demonstrating the potential of community learning radio programmes in addressing local developmental issues, and to inform the vision and strategy of the Isabel Provincial Government.

PROGRAMME IMPLEMENTATION

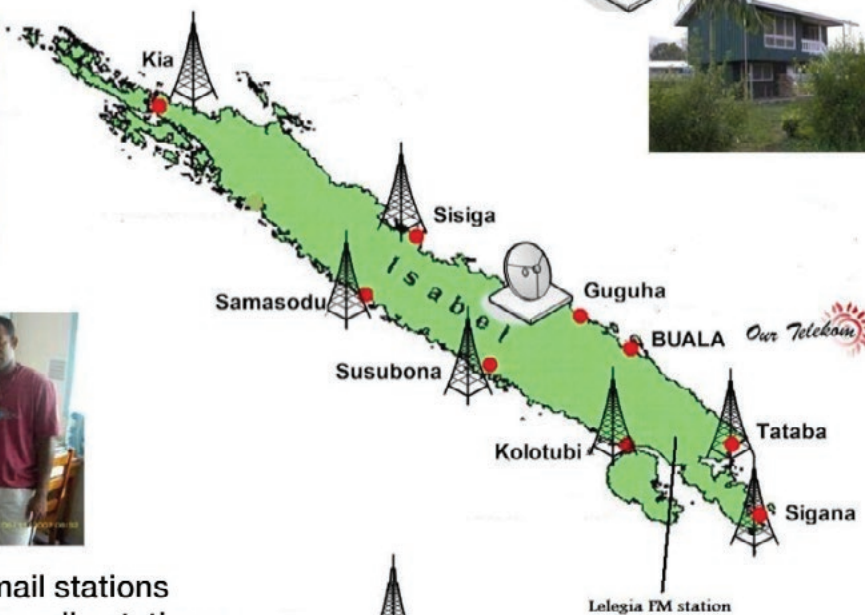
Teaching and Learning: Approaches and Methodologies

The Isabel Learning Network of radio stations was developed on the model of the Telecentre Network, which aims to empower poor and disadvantaged communities through basic information and communication technology services. Community-based telecentres are helping to connect Pacific island communities with one another, as well as with the wider world. The Pacific Online Telecentre Community was created to support the establishment of community telecentres in the Pacific.

There are eight community FM radio stations in the network, including seven with co-located PFnet (HF) email stations. The stations were created to support better dissemination and sharing of information within the community. One of the stations, located at the provincial capital Buala, is the hub of the network, coordinating, advocating and negotiating on behalf of all the stations. Since 2011, efforts have been made to build a workable governance framework for the eight stations. This remains work in progress. The network still relies on a consultant as its key intermediary in coordinating among the stations. This is challenging work as most of the stations are based in remote areas with no stable grid power.

The network was initially developed with the intention that it should be the focus of collaboration between multiple stakeholders, including government agencies, international non-governmental agencies and local intermediaries, as well as local community members. The eight stations, it was hoped, would work closely with the provincial government in gaining technical support, and with the COL in building their communication capacities and developing learning contents relevant to the communities involved. In reality, however, despite these good intentions, the results have been unsatisfactory. None of the eight radio stations is currently operational, essentially because of the challenge of

Community ICT facilities in Isabel



7 combined email stations and community radio stations: «Community Communication Centres»



maintaining the facilities and the often prohibitive cost of fixing broken equipment.

PROGRAMME CONTENT AND TEACHING MATERIAL

Capacity building at community level is an ongoing struggle for the programme. The Isabel Learning Network has begun to identify potential themes that could be implemented into the radio learning programme. Non-formal learning and the development of basic literacy skills have been highlighted as priorities. The network also aims to explore the links between basic literacy and other life skills, such as health, financial literacy, environmental protection, and the prevention of family violence, in the future.

Recruitment and Training of Facilitators

Ownership of the stations has historically been shared between communities and the provincial government. Village-based committees provide guidance, oversight and support to each community station. Network staff receive professional training from the Regional Media Centre and the Commonwealth of Learning, as well as from the Solomon Islands Development Trust. Local volunteers are trained to record, edit and broadcast digital audio. However, while the training has been successful, programme staff often find it difficult to transfer their skills into other contexts.

LESSON LEARNED AND CHALLENGES

Challenges

The network encountered a number of challenges, some of which it is still attempting to resolve. These included:

Slowness of response from government and budgetary constraints on maintaining and repairing broadcasting facilities. The humid and salty weather on the islands can corrode broadcasting facilities, creating challenges for the network in maintaining its infrastructure in a sustainable way. The provincial government has not been strongly committed to maintaining the equipment. When repairs are needed the response can be very slow. In one instance, it took a local community almost two years to get the funds approved to fix some pieces of equipment. Not long after this, more equipment broke at other stations, which required more funds to be allocated to the maintenance of facilities. Managing and maintaining eight stations is a major responsibility. The provincial government has not

continued to maintain the stations and there is no more in the budget set aside for the operation and maintenance of the stations.

Unstable electricity supply restricts active communication among stations. The unreliable communication infrastructure has been another critical factor limiting the success of the programme. The unstable supply of electricity and internet connection make it difficult for the eight stations to connect with each other and share information, particularly in internet-restricted environments. Seven of the eight stations are based in remote rural areas which have no grid power – the stations are solar-powered and can broadcast for only two or three hours each evening. There is little internet access in Isabel and most villages do not have phone coverage.

Lack of local participation and ownership. The implementing organization, the Commonwealth of Learning, aimed to develop capacity within communities, helping local stations to plan, design, deliver and develop their own radio programmes. This approach is intended to give local people full ownership and responsibility for taking the programme forward. However, because of a lack of need assessment at the initial planning phase, and the absence of local buy-in or leadership, communities lacked motivation to get the network functioning, even with the support from the COL.

Volunteering competes with the need of farmers to generate income. The network relies on villagers to volunteer their time. This is a big commitment for subsistence farmers, as volunteering takes them away from activities that generate income for their household. Running the stations solely on the basis of volunteer activity proved challenging. Volunteer time had to compete against the time people need to work in their gardens to produce their food or perform other income-raising activities in order to buy fuel, kerosene and send their children to school.

Different local language groups. As mentioned above, there are eight language groups within Isabel, most of which are completely distinct. Some of these languages are only spoken in small pockets and by the older generations but most of them are widely spoken in different parts of the island. As most of the stations broadcast in the local language, it was difficult to share learning content between the stations. The eight radio stations had to find ways to communicate with one another effectively. The network would sometimes rely on local volunteers switching between languages on air to ensure information reached all the local villagers, irrespective of the language constraints.

Adapting to fast-changing technology. One of the challenges facing the network is to remain sustainable in an era in which technologies continually change and develop. This means that, in addition to the costs of maintenance and repair, the network must find the resource to constantly upgrade its equipment. Good mobile connection and the fact that most islanders own a cell phone, suggests that mobile phones could, in future, be utilized as another medium of instruction.

LESSONS LEARNED

The Isabel Learning Network proved that, despite the geographic constraints and the challenge posed by a fluctuating supply of electricity, community radio can educate, inform and empower communities. The network began with the intention of using ICT devices as a means of non-formal education. It became clear that this can only be fully realised with local buy-in from within the community. Some of the lessons that can be drawn from the programme are:

Mobilization of locals and the assessment of initial need are vital. Needs assessment is essential in determining local priorities. It may be that locals want to get out of the poverty trap and regard communication as a secondary concern. There seems to be a connection between the absence of needs assessment and the subsequent lack of motivation and engagement within communities.

A shared vision and a clear roadmap of how to proceed are essential to the success of the programme. Participants in the network need to share an overarching vision and see the network as a means of achieving their goals, alongside the provincial government, local intermediaries, the Commonwealth of Learning, and the local islanders. Without a clear vision, the distinct priorities of the different stakeholders can prevent the network from functioning cohesively.

Using local organizations as intermediaries rather than one individual would be more effective. The network relies on a single consultant to coordinate the daily functioning of the eight stations. However, it has been extremely challenging to communicate with both the provincial government and the local stations in an environment of scarce resources. In the future, the COL will work with local organizations as intermediaries to help ease these communication difficulties.

Conduct a thorough analysis on the cost of facility maintenance and repairing at the initial pro-

gramme design phase. Initially, the United Nations Development Programme helped establish of the facilities. However, the subsequent cost of facility maintenance and repair placed an additional financial burden on the provincial government. The cost of equipment maintenance and repair should be considered at the programme design phase to determine the feasibility of using radios as the delivery medium of learning programmes. The network needs to find other solutions to deal with the sustainability issue, such as blended approaches to learning.

Design blended learning modules to utilize the existing infrastructure. Much of the island is covered by mobile phone towers. This means it might be possible to design models of blended learning which make use of the existing mobile infrastructure to offset some of the shortcomings and costliness of the existing radio facilities. By using a number of different technological devices the programme could reduce its dependence on fragile supporting infrastructures as well as the attendant maintenance and repair costs.

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BRAZIL

Programa de Alfabetização na Língua Materna (PALMA)



COUNTRY PROFILE

Population

198,361,000 (2012 estimate)

Official Language

Portuguese

Poverty (population living on less than USD 1.25 per day)

4% (2000–2009)

Total Expenditure on Education as % of GNP

5.8% (2010)

Total Youth Literacy Rate (15–24 years, 2005–2010)

Total: 98%, Male: 97%, Female: 99%

Adult Literacy Rate (15 years and over, 2005–2010)

Total: 90%, Male: 90%, Female: 90%

PROGRAMME KEY INFORMATION

Project Title

Programme of Mother Language Literacy (PALMA: Programa de Alfabetização na Língua Materna)

Date of Inception

2011

Operational Area

Brazil

Implementing Organization

IES2 – Innovation, Education and Technological Solutions (private company)

Partner Organizations

NOKIA and the Federal University of Paraíba

Language of Instruction

Portuguese

Annual Programme Costs (per learner)

USD 60 (Software), USD 90 (Smartphone), USD 90 (SMS)

BACKGROUND AND COUNTRY CONTEXT

The 2009 Brazilian National Household Survey found that 14.1 million Brazilians were illiterate, while 35 million – approximately 26% of the population – were classed as «functionally illiterate», meaning they lack some of the basic reading and writing skills necessary for day-to-day life. Improving literacy rates in Brazil is considered critical in improving the life conditions of the country's poorest and most

marginalized people. Numerous local and national programmes have, over the past decade, sought to promote literacy in Brazil. These have included the Literate Brazil Programme, Alfabetizando com Saúde, Alfabetização Solidária, and the Zé Peão School Project.

IES2 (Inovação, Educação e Soluções Tecnológicas – Innovation, Education and Technological Solutions) was founded in 2010. It is an outstanding example of the role the private sector can play in national campaigns to improve literacy. IES2 is a private company, set up by professionals and experts in education and the social sciences, which aims to provide innovative learning opportunities, accessible to anyone, anywhere and at any time, through web- and mobile-based technologies.

PROGRAMME OVERVIEW

The Programme of Mother Language Literacy (PALMA) was launched by IES2 in 2011. It combines various elements of literacy learning with activities to boost cognitive understanding, using sounds, letters, pictures and numbers in an educational programme delivered entirely through a mobile device. PALMA uses mobile and web technologies, along with SMS text-messaging functionality, to complement the more standard approaches of formal education. It provides a platform for users to learn, practise and be tested on literacy, numeracy and science-based modules in their mother tongue, Portuguese. The PALMA programme is available for anyone to download to a smartphone, so users outside the formal education system can also access the resources.

In 2011 the Ministry of Education endorsed the initial roll-out of the programme to 50,000 learners within the Literate Brazil Programme, a Federal Government scheme targeting areas identified as having the worst problems with illiteracy. The programme's biggest challenge is to engage young people and adults in literacy learning and to encourage them to attend regular elementary school classes. The Ministry of Education had planned to introduce PALMA in 2011, 2012 and 2013, but, because of bureaucracy, it was not possible.

Aims and Objectives

IES2 set the following objectives for the PALMA programme:

- ✎ To develop literacy and problem-solving skills in different contexts;

- ✎ To improve the public perception of adult education;
- ✎ To motivate people to improve their literacy skills;
- ✎ To reduce the potential stigma associated with adult literacy training;
- ✎ To promote individual responsibility for learning and skill development; and
- ✎ To provide critical data for policymakers through an analysis of user behaviour.

PROGRAMME IMPLEMENTATION: APPROACHES AND METHODOLOGIES

Organisational Structure

IES2 employs more than thirty people on the delivery of the PALMA programme, split between management and corporate communications, research and development, and IT. The programme has dedicated teams responsible for programme design, the development of web and mobile applications, local monitoring and administrative support. All members of PALMA's professional team are graduates, while those in the research and development team hold PhDs and have experience of educational management.

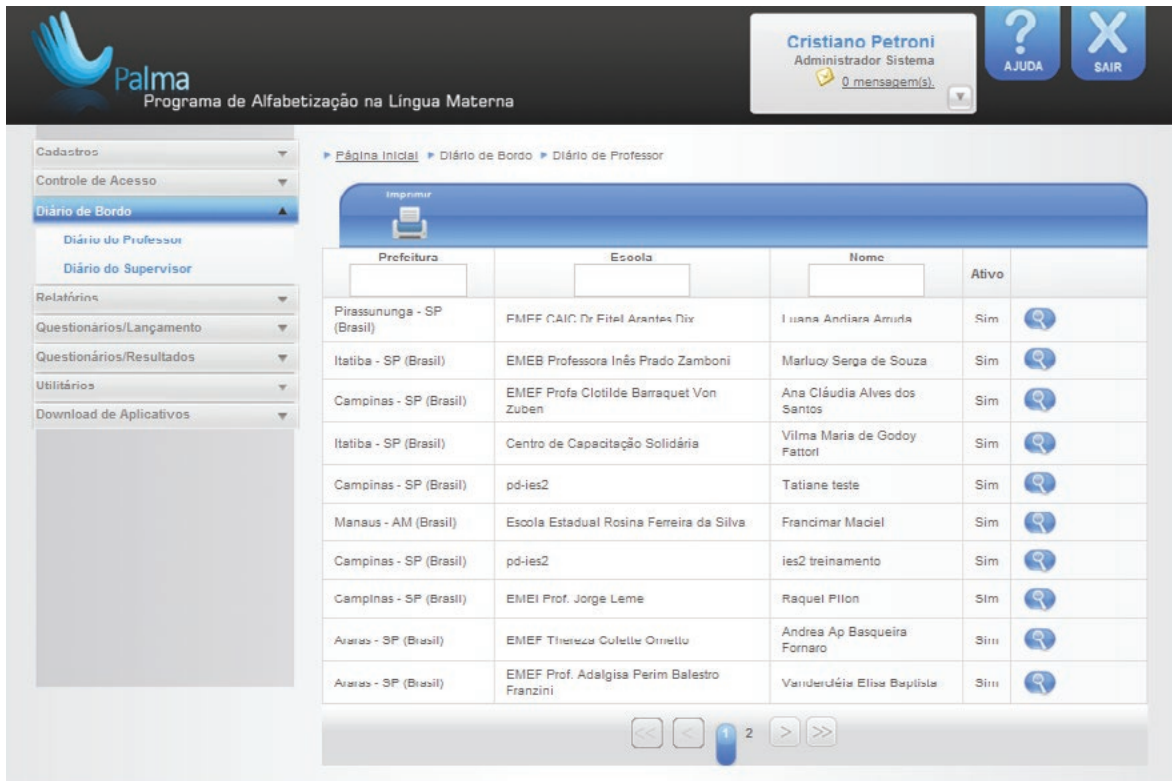
IES2 also draws on the expertise and support of its partners. The Nokia Technology Development Institute, for example, contributed to the training of the company's mobile-application developers and assisted in the roll-out of extensive usability testing with students in public schools.

Recruitment and Training of Facilitators

Classroom facilitators on the programme work part-time, and are paid USD 390 per month by IES2. They receive eight hours of training to prepare them for using PALMA as a teaching tool. During this training, facilitators learn about the programme's content, the timetable to which it operates and how the learning programme and the web-based management system, which allows tutors to track the progress of their learners, are integrated. The quality of the training sessions is monitored and measured by feedback provided by the facilitators at the end of each session.

Mobilization of Participants

PALMA is used primarily to complement formal education, with learners introduced to the programme by literacy tutors in school settings. There are two models for the selection of schools to the programme: the one used by the Federal Government and the town-to-town selling model used by IES2. In



the Federal Government programme, participating schools are identified in accordance with the literacy needs of the towns and cities in which they are based. In the town-to-town selling model, representatives of IES2 select the towns and cities to which they wish to offer the programme, initiating contact through the local department of education.

Individuals can also sign up to the stand-alone programme through their mobile device by accessing the IES2 website at www.ies2.br.

Training-Learning Methods and Approaches

Learners within selected formal learning institutions are provided with smartphones through which the PALMA programme is delivered. Teachers then use PALMA as a complementary tool to develop the literacy skills of participants and track their learning progress.

The PALMA programme follows the National Curriculum Guidelines of the Ministry of Education. The programme's curriculum is split into two years, with the fundamental components of basic Portuguese literacy addressed, for the most part, in the first year. The programme contains learning and assessment materials for each area of the curricu-

lum, and is delivered through themes that make the learning relevant to real-life contexts such as relationships, work and family life, sport, health and the environment.

The PALMA learning environment reflects the close attention paid in its preparation to the cognitive processes involved in learning. The learning material was designed by experts in psychology and education and reflects a specific pattern of literacy development, beginning with recognition of the correspondence between letters and their sounds, and progressing from this to syllables, words and, eventually, syntax. The mobile application places great emphasis on learners' recognition of sounds, as well as graphics, in order to ensure the literacy learning is as relevant as possible to day-to-day contexts.

The picture above provides an example of the PALMA learning environment and the activities used to practise and assess new skills. Since the modules can be accessed at any time, at the user's convenience, they can be repeated as many times as necessary in order to consolidate the learning outcomes and complete the activity tests. The results of these activities are sent by SMS to a web-based management system, which the teacher or supervisor can use to track the development of individual learners.

Monitoring and Evaluation

The progress of learners and the impact of the programme are measured through the web-based platform, which allows tutors to track the performance and development of their students throughout the programme. The data sent to the platform is analysed by IES2's research and development team to identify areas of the programme that are particularly successful and those that require improvement. Teachers can send questions and comments to the IES2 administrators using the web-based platform, which allows for direct feedback from system-users.

PALMA learners can also inform the evaluation of the programme by sending SMS text messages to the web-based management system. These messages are categorized and turned into reports. The teachers have access to this system and are able to follow the development of their learners. Among other things, the system allows them to compare their students' results at the end of the programme to those gained at the start.

IMPACT

- ✎ PALMA was used by 277 public-school learners in 2011 and 2012, with the following results:
- ✎ Higher class attendance (absence fell by approximately 50%);
- ✎ Learners spent more time learning outside the classroom (measured by the use of the programme and the SMS service out of school hours); and
- ✎ Learners improved their understanding and skills with the use of certain technologies.
- ✎ Older students (aged between fifteen and eighty-seven years), who attended classes in the evening, were also motivated to use the technology outside of the learning sessions.

LESSONS LEARNED

The use of mobile-phone technology offers many advantages. Learners are more motivated to learn, as they can adapt the programme to their everyday lives, using it at a time that suits them and getting instant feedback on their work. The prospect of keeping the phone once they complete the programme helps ensure their interest is maintained throughout.

The mobile phones also give learners more opportunities both to access information and to communicate, among themselves and with the teachers. Teachers' positive experiences of the programme

have encouraged them to think about other possible uses for technology in the learning process.

Finally, the low cost of the technology makes it easier to maintain and implement the programme in other locations.

CHALLENGES

The main challenges for the continuity of the programme lie in securing funding for its continuing roll-out and in convincing teachers and facilitators in formal education institutions of the importance of using technology as a learning tool.

SUSTAINABILITY

IES2 has secured the sustainability of the PALMA programme through cooperative agreements with its various partners. The largest funder of PALMA is the Federal Government, which gives support as part of its Literate Brazil Programme. IES2 also enjoys a long-term partnership with Nokia, while an agreement has been made with a number of universities to investigate the use of PALMA, as part of the Zé Peão School Project.

The programme can be scaled up and adapted to other languages and needs.

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COLOMBIA

Virtual Assisted Literacy Programme

COUNTRY PROFILE

Population

47,120,770 (DANE, 2013)

Official Language

Spanish

Other recognised languages

Quechua, Wayuu, Paez, Embera, sikuany, piapoco, curripaco, puinave, romani, among others (total: 65)

Poverty (Population living on less than 1.25 USD per day, 2000-2007)

16%

Total Expenditure on Education as % of GDP (2011)

4.5

Primary School Net Enrolment/Attendance (2005-2009)

90%

Total Youth Literacy Rate (aged 15 to 24 years, 2005-2008)

Male: 98%, Female: 98%, Total: 98%

Adult Literacy Rate (15 years and over, 2005-2008)

Male: 93.5%, Female: 93.7%, Total: 93.6%

PROGRAMME OVERVIEW

Programme Title

Virtual Assisted Literacy Programme (Programa de Alfabetización Virtual Asistida, PAVA)

Implementing Organization

North Catholic University Foundation (Católica del Norte Fundación Universitaria)

Language of Instruction

Spanish

Funding

National Ministry of Education

Date of Inception

1997 – present

BACKGROUND AND CONTEXT

In 1991, the New Constitution of Colombia established that education was a human right that should be guaranteed by the State, society and family from pre-school to secondary school, or from five to fifteen years of age. Many other improvements in the country have been observed until today, as public expenditure on education has progressively grown

from 2.8% to 4.8%. From 1985 to recent years, net enrolment in primary school has increased by 25%, reaching 90% of the Colombian children, the survival rate to Grade 5 has grown from 67% to 88% and the gross enrolment in secondary school has risen from 73 to 91%. Also, the adult literacy rate has significantly improved, especially when comparing the high percentage of 13.5% adults with no basic literacy and numeracy skills twenty-five years ago with the current average of 7%, similar to other more advanced Latin American countries with regard to literacy such as Uruguay and Argentina.

However, recent data show there are still approximately 2.3 million people aged 15 years or older who are illiterate. The greatest concentration of this target population falls among the most vulnerable groups, such as indigenous people, the poor and Afro-descendants. Disparities in different departamentos have also been reported: whereas in Antioquia the rate of adult illiteracy has fallen to 5.8%, in Choco there are as many as 20.1% of the adult population with no literacy (2003). In 1994, the National Congress passed the General Education Law which established the structure of educational services and provision to learners and educators, including financing, monitoring and evaluation. But it was only in 2002 that the National Ministry of Education (NME) took over the lead in youth and adult learning opportunities. As a result, the NME established the National Literacy Programme and Youth and Adult Basic Education (Programa Nacional de Alfabetización y Educación Básica de Jóvenes y Adultos).

This programme has been designed to increase the provision of flexible learning opportunities to youths and adults by articulating partnerships between the National Ministry of Education, Science and Technology with public, private and civil society organisations. On the government side, its role is to give the necessary support for the implementation of the literacy programmes in local service centres and to set the structure of the curriculum, known as the Special Integrated Academic Cycle. It is organised into six stages or “cycles” which are equivalent to certain levels of formal education and integrated in

sequence for continuation through one stage after the other until the secondary level has been completed.

A very interesting example of the implementation of this national programme at ground level is the service offered by the North Catholic University Foundation (Católica del Norte Fundación Universitaria). Established in 1997 in Antioquia, the foundation's primary aim is to provide virtual educational services to meet the country's demand in highly-qualified human resources. As a pioneer in the field of virtual education in Colombia, the Católica del Norte, among its many initiatives, offers the Virtual Assisted Literacy Programme (Programa de Alfabetización Virtual Asistida), an innovative approach to youth and adult learning due to the use of new information and communication technologies which promotes digital literacy not only to learners, but also to facilitators. This programme was awarded in 2010 with the Honourable Mention of the UNESCO King Sejong Literacy Prize for providing an inspiring and creative example of an effective literacy programme designed to serve and reach vulnerable groups with limited or no access to learning opportunities.

VIRTUAL ASSISTED LITERACY PROGRAMME

Aims and objectives

The programme endeavours to:

- ✎ reduce the national rate of youth and adult illiteracy in Colombia;
- ✎ contribute to learners' development of writing, reading, comprehension and numeracy skills in order to enable them to face the social and economic challenges in society;
- ✎ develop basic abilities to the use of information technology tools to promote social, familiar and labour inclusion;
- ✎ promote gender equity;
- ✎ allow students to work autonomously but, at the same time, to perform team and collaborative work;
- ✎ increase participants' self-esteem and give them the opportunity to move into the formal educational system;
- ✎ expand their labour competencies through vocational training classes in order to improve their employability.

PROGRAMME IMPLEMENTATION

The Católica del Norte works in partnerships with educational institutions which have implemented

the Virtual Assisted Literacy Programme in the city of Valledupa and throughout 45 municipalities located in five departments of Colombia – La Guajira, Bolívar, César, Santander, Antioquia – where there are high illiteracy rates especially among the vulnerable groups due to poverty, social exclusion and violence. The foundation selects educational institutions which have the capacity to offer classes within their communities. The role of the Católica del Norte is to provide trainings and materials and to oversee the quality of lessons and the progress of participants' learning, while the institutions deliver the services at ground level and provide human resources and infrastructure (i.e. classes, desks, computer labs) for the classes.

Recruitment and training of facilitators

There are currently 460 facilitators working in the Virtual Assisted Literacy Programme, the majority of whom are women, a fact that replicates the well-known gender bias in education roles in Latin American countries. Selection criteria include being a licensed teacher or in the final year of university studies working towards a teaching degree, having at least two years of teaching experience, demonstrating minimum experience using computers and the internet in order to successfully participate in the pre-service training, and finally, having general knowledge on theoretical and practical approaches to adult learning. Prospective facilitators are recruited by the educational institutions which send a list of candidates' names to the departamento's secretary of education, who is then responsible for the approval of the selected facilitators. Facilitators work with groups of 20–25 students each, for 10 hours per week – divided into 8 hours for classes plus 2 hours for meetings, teacher trainings and filling out progress reports – and they receive a total stipend of USD 1,300 per course disbursed in four instalments per year.

Facilitators are requested to participate in a pre-service training entitled Computer-based Tools for Youth and Adult Education which lasts 120 hours and contains three modules including techniques and methodologies, fundamental knowledge on pedagogy, adult learning, literacy and educational didactics. Training sessions are carried out by experts in the field of study they teach and aim to give facilitators an overview of their tasks and provide an introduction to the programme's model as well as the content. It is also an opportunity to strengthen the participants' abilities to operate computers and the technology they will be expected to master during the classes. The Católica del Norte additionally offers other professional development

workshops on Technology and Entrepreneurial Skills, Strengthening the Quality of Education and Foreign Language.

Enrolment of learners

The programme targets youths and adults who are aged 15 or over and come from the lowest socio-economic groups in the country. Despite the non-existence of any major discrepancy between males and females with regard to literacy rates and access to education according to national data, the vast majority of learners are women. This could be explained by the great gender disparity in unemployment rates: 15.8% of females are outside of the labour force as opposed to 9.3% males (2009), a fact that allows illiterate women to have more time available to pursue education in contrast with their male counterparts. Furthermore, there has been evidence demonstrating that women tend to be more motivated than men when it comes to participating in literacy programmes. Female learners tend to perceive such classes as an opportunity to socialise as well as feeling more confident of being open about their basic educational needs. In 2010, almost 15,000 students were enrolled in the programme. Learners are recruited through communication media, such as television, radio and the internet, advertisements of secretaries of education and local educational institutions as well as home visits carried out by facilitators who directly invite member of their communities to enrol in the classes.

TEACHING AND LEARNING APPROACHES AND METHODOLOGIES

Classes last for approximately eight hours per week, totalling 230 hours spread across the year from March to December. The students spend half of the time on-site, whereas the remaining four hours are dedicated to individual and collaborative work on the computer in order to reinforce what was previously learned. Classes take place in the educational institutions, mostly during alternative timetables in the afternoons and weekends, since the classrooms are also used for formal primary schooling. Because students have very limited financial resources, their personal access to technology is very restricted. Therefore, the educational institutions offer computer labs where they can complete their four hours of independent work according to their own individual time availability.

The programme contains two phases: an initial phase where learners develop the basic writing, reading and numeracy skills which can be completed in 16 weeks, and the complementary phase,

aimed to develop during the remaining 20 weeks the competencies and knowledge on social and natural sciences which are built on the basic skills previously developed. Overall, the programme aims to develop oral and written communication to improve learners' interpersonal relationships and employability as well as enhancing their performance in ordinary daily activities. Learners are taught argumentative skills which enable them to reason about statements, provide arguments to support their view, develop a hypothesis and provide theories and concepts to establish a conclusion; they are taught critical thinking and problem-solving skills and the mastering of technologies, i.e. computer and the internet. In addition, the completion of the programme corresponds to the first stage or "cycle" of the Special Integrated Academic Cycle, which allows students to move on into the formal public educational system.

Classes on-site resemble traditional courses where facilitators and students work together in activities to enhance reading, writing and general knowledge through lectures and the use of textbooks. Each of the four subjects has its own textbook which includes not only theoretical content but also practical activities. Their titles are Language, Rediscovering the Wonderful World of Mathematics, Scientific Thinking and Social Changes. In virtual classes, on the other hand, students work independently on the computer, though they also receive instructions and help from the facilitators as well as being encouraged to engage with peers online. They use a multimedia CD with lessons and activities which include audios and videos using contents developed by experts in adult education from the Católica del Norte Fundación Universitaria and then reviewed and approved by the National Ministry of Education. Students also work with the Learning Virtual Environment (LVE), a software package designed for the delivery of e-lessons, promotion of collaborative work among peers and management of student progress.

Prior to the start of classes, students take a diagnostic assessment during which they have their writing and reading baseline skills evaluated in order to be assigned to the appropriate level matching their individual needs. There is also a mid-term language examination, which assesses the competencies acquired by learners in the initial phase of the programme, and a final exam which evaluates the students' knowledge in the four areas (i.e. literacy, mathematics, social and natural sciences) as well as their computer skills. While the mid-term evaluation only assesses reading comprehension, interpretation, argumentation and analytical skills (language), the final exam also evaluates the four basic arith-

metic operations (mathematics); general knowledge about nature (natural sciences); and understanding about democratic processes, human rights, family, state, society and geographical locations (social sciences). Both the mid-term and the final examination are paper-based, but it also include tasks on the computer, and they enable students who pass the exams to move on into stage or “cycle” two of the Special Integrated Academic Cycle. They also receive an official certification of completion of the third-grade level of primary school.

Funding support

The Virtual Assisted Literacy Programme is funded entirely by the federal government through the NME. In order to receive funding, each organisation, including the Católica del Norte, has to submit a basic budget of expenditure per student that includes detailed information about the costs for material, training for facilitators and technology. After the ministry has carried out a financial feasibility study in the target geographic area where the grant was submitted, both parties sign a contract which states the NME will provide the financial resources while the institution, in this case the Católica del Norte, will deliver the education services. The costs per learner in the Virtual Assisted Literacy Programme equal USD122 and the expenditure per year is equivalent to USD1.7 million.

MONITORING AND EVALUATION

Three different groups of actors are involved in the monitoring and evaluation of the literacy programme offered by the Católica del Norte: 1) the regional coordinators who are in charge of monitoring the activities and results, 2) facilitators and students and 3) a research group that evaluates the quality of the programme and the NME who compiles the data and uses them for tracking the progress of national educational policies and programmes’ implementations. Data are collected through classroom observations, field notes written by facilitators and bimonthly meetings with all the coordination staff. They are also compiled through the software, which enables facilitators and programme coordinators to track students’ learning progress by accessing information online regarding completed activities, completed lessons, grades and scores in assessments as well as statistics and participation in online discussion groups.

To date there has been no formal external evaluation. However, there are annual non-experimental evaluations designed to assess three features of the programme: 1) pedagogical aspects, such as student

learning and progress, relevance of the programme to personal, family and social development; 2) organisational aspects, such as the quality of infrastructure (e.g. classroom and computer labs), student attendance and drop-out rates, the role of the manager and coordinators of the foundation and 3) training of facilitators, that is, the quality of the pre-service and professional development trainings, the performance of facilitators in teaching literacy and general content to facilitators and the associations between the training sessions and student learning. Results from these annual evaluations have found a reduction in illiteracy rates: in 2010, 1,765 students were promoted into stage or cycle two and, since the programme’s inception, 33,114 persons have successfully acquired literacy and numeracy skills as a result of their participation in the programme.

The programme has benefited participants in many ways:

- ✎ Academic life: the development of basic skills enabled learners to progress into their educational trajectory, moving from cycle one of the Special Integrated Academic Cycle into cycle two and others;
- ✎ Family life: oral and written communication and the understanding of general knowledge has enhanced relationships between family members, improved parental skills, increased awareness that education changes students’ lives as well as their families’, decreased in domestic violence;
- ✎ learners have been empowered to actively participate in the democratic process by being more critical and having a deeper understanding and self-awareness of their personal choices;
- ✎ there has been an increase in participation of vulnerable groups, such as women and rural populations in the decision-making process of their families and their communities as well as greater demand of their rights as humans and citizens; and
- ✎ the ability to use technological devices such as the internet and computers has increased, promoting self-reliance and integration into the globalised world.

CHALLENGES

Católica del Norte has faced many challenges in the implementation of the Virtual Assisted Literacy Programme including: limited accessibility to technology by participants after the completion of the programme preventing learners to keep using and enhancing their newly-acquired computer skills; limited governmental funding designated to liter-

acy programmes; lack of motivation and interest in learning in the general society which influences individual participation in the programme and causes high rates of student drop-outs. In order to tackle these two latter obstacles, the foundation has developed and implemented a course on entrepreneurship aimed at increasing rates of class attendance, programme completion, integrating students into the labour world and providing an additional strategy to improve the participants' quality of life and their employability.

LESSONS LEARNED

The key lesson learned by Católica del Norte during these almost 15 years of experience in the implementation of the Virtual Assisted Literacy Programme is that the use of technology combined with high-quality teacher training is effective in teaching literacy to youths and adults, especially those with restricted access to educational opportunities. The scope of the success of this programme has not been limited to the promotion of literacy. On the contrary, this initiative reaching out to underserved groups through the internet has also proved to be effective in promoting social mobility, allowing participants to acquire general knowledge by the use of newly-acquired literacy skills in combination with access to online newspapers, books and several other resources as well as improving their interpersonal relationships. Overall, this programme has shown that innovative non-formal education programmes can produce great improvements in the participants' daily lives.

SUSTAINABILITY

The Virtual Assisted Literacy Programme has demonstrated sustainability for various reasons. First, the virtual component employs the well-known Learning Virtual Environment, a scalable approach due to its simplicity, user-friendliness, promotion of self-service and independent access to courses and the management capacities which easily allow tracking of student learning. Second, Colombia not only needs literacy programmes as 7% of the youth and adult population still do not master basic reading, writing and numeracy skills, but it also has the capacity to implement such initiatives: 80% of departments and municipalities have educational institutions which can provide the appropriate infrastructure for the implementation of these projects. Third, the Virtual Assisted Literacy Programme has been presented to the Dominican Republic which has requested a pilot project with 1,000 participants that it is soon to be initiated. Fourth, the programme provides educational opportunities in accordance

with the National Literacy Programme and Youth and Adult Basic Education, which guarantees complete and sustainable federal funding by law. Finally, the programme has increased its coverage since its inception in 2008, which started with only one pilot project in La Guajira with 350 participants. Due to its positive results, it has expanded its reach to five departments and 22,000 learners today.

SOURCES

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COLOMBIA

Sistema Interactivo Transformemos Educando



COUNTRY PROFILE

Population

47,120,770 (DANE, 2013)

Official Language

Spanish

Other recognised languages

Quechua, Wayuu, Paez, Embera, sikuany, piapoco, curripaco, puinave, romani, among others (total: 65)

Poverty (Population living on less than 1.25 USD per day, 2000–2007)

16%

Total Expenditure on Education as % of GDP (2011)

4.5

Primary School Net Enrolment/Attendance (2005–2009)

90%

Total Youth Literacy Rate (aged 15 to 24 years, 2005–2008)

Male: 98%, Female: 98%, Total: 98%

Adult Literacy Rate (15 years and over, 2005–2008)

Male: 93.5%, Female: 93.7%, Total: 93.6%

Statistical Sources

El Departamento Administrativo Nacional de Estadística (DANE), UNICEF: Information by country, World Bank: World Development Indicators database

PROGRAMME OVERVIEW

Programme Title

Pilot Project of Sistema Interactivo Transformemos Educando in the Department of Guainía: Use of digital tablets and multilingual educational software for adult literacy and adult basic and secondary education



Implementing Organization

Foundation for Social Development
Transformemos (Fundación para el Desarrollo
Social Transformemos)

Language of Instruction

Curripaco, Sikuany, Piapoco, Puinave and Spanish

Date of Inception

2013

BACKGROUND AND CONTEXT

Fundación Transformemos, a civil society organization and winner of the UNESCO Confucius Prize, has implemented the Sistema Interactivo Transformemos Educando in 780 official educational institutions in the last seven years. Its objective is to demonstrate that multilingual software for tablets can be used to provide pertinent, flexible and formal primary and secondary education through official educational institutions. The Sistema Interactivo Transformemos, which does not cost more than USD 300 per learner, implements educational software for digital tablets to explore the areas of study that are equivalent to primary and secondary education. This figure covers the payment of licensed teachers, the purchase of one digital tablet per learner and teacher, educational software, the setup of one interactive classroom for every 30 learners, the training of teachers, and the evaluation of the entire process. These have been the aims of Fundación

Transformemos since it designed its first educational software for interactive classrooms in 2010, which has now been adapted for digital tablets.

Besides providing quality education, some of the main accomplishments of the initiative include:

- ✎ enabling 320,000 young people and vulnerable adults to access new technologies;
- ✎ training 12,000 teachers in youth and adult education;
- ✎ providing 1.2 million didactic print materials, tailored to the needs of the local population;
- ✎ setting up 2,000 interactive classrooms with a laptop, the educational software Transformemos and a video projector;
- ✎ and starting from 2013, each learner is given a tablet with the software Transformemos.

These didactic interventions are designed in accordance with the standards set by the Ministry of Education and with the specific needs of the target population in mind.

In 2013, Fundación Transformemos started a pilot project with multilingual communities in the Department of Guainía, which has a significantly high school drop-out rate, as well as indigenous communities with a high level of illiteracy.



The Department of Guainía – located in the Colombian jungle area between the Guiana Shield and the Amazon rainforest – has 40,985 inhabitants, 80% of which are indigenous. Approximately 18.3% of the population, or 7,014 young people and adults, are illiterate, according to the National Department of Statistics and the Ministry of Education. Of every 100 children that enter preschool, only 11 reach the 11th grade, which represents a drop-out rate of 89%. In total, more than 10,000 young people have withdrawn from the educational system in the last 10 years before finishing their studies. Additionally, 78.8% of the population, or 30,202 inhabitants, live in extreme poverty, which is reflected in the high rates of teen pregnancy (34%) and infant mortality.

In the face of this grave social reality, the Government of the Department accepted the proposal to implement the Sistema Interactivo Transformemos Educando in its official educational institutions, which would reach a total of 3,600 illiterate young people and adults, 89% of which are between the ages of 18 and 59. The programme is based on region-specific didactic interventions which are tailored to the needs of each region, where up to four different indigenous languages are spoken, as well as Spanish. The initiative is also designed to hire and train teachers, as well as to harmonize the Sistema Interactivo with the existent frameworks in each of the educational institutions.

The starting point for this pilot project was a baseline investigation which responded to the question: «Who does the programme aim to educate in the Department of Guainía and with what purpose?» It was directed and coordinated by Fundación Transformemos, with the support of a group of local teachers/specialists in ethnic education. Information was gathered through:

- ✎ Interviews with regional educational authorities (Secretary of Education; The Directorate of Youth and Adult Education; principals from the educational institutions; teachers);
- ✎ a literature review of descriptive studies of the region, including linguistic, archeological, and anthropological studies on ethnic groups, as well as ecosystemic, economic and social studies carried out by national and international universities, investigative institutions, ministries, among others.

The information gathered facilitated the definition of a strategy that includes a multilingual educational approach and aims to:

- ✎ preserve the cultural richness expressed in local languages;
- ✎ to contribute to the construction of an ethnic community capable of creating new world views;



- ✎ to facilitate the inclusion of these diverse communities in a national project of equal opportunity;
- ✎ and to formulate the content of the literacy, basic and secondary education modules.

THE PROGRAMME TRANSFORMEMOS

Aims and Objectives

General objective: Contribute to the preservation and defense of vulnerable communities, their cultures and rights, through a learning programme equivalent to official formal education that will allow these communities to become generators of progress and peace.

Specific objectives are:

- ✎ To facilitate the construction of a multicultural nation through multilingual education of ethnic communities and vulnerable populations.
- ✎ To contribute to the equality and preservation of ethnic communities through contextualized and meaningful education.
- ✎ To allow vulnerable communities to have access to the Information Society through their inclusion in digital cultures.
- ✎ To contribute to the respect and rights of ethnic

communities that live in marginalized regions through an education that is respectful of their cultures, native languages, and interests.

- ✎ To develop formal educational processes in official and high-quality educational institutions in marginalized ethnic communities through the use and appropriation of new technologies.
- ✎ To provide the Department of Guainía with an Interactive System of Education for Young People and Adults which guarantees the continuity of their studies until they culminate their secondary education and which would certify them in accordance with the standards established by the National Ministry of Education.
- ✎ To reduce the drop-out rate of children, given that the programme has been successful in reintegrating their parents, aunts, uncles, and older siblings. Since one digital tablet is currently provided for each family group, every member has the opportunity to progress in his/her studies.

Recruitment and Training of Facilitators

In order to ensure that the investment in human resource training remained in this marginalized area, local teachers with the following characteristics were hired: they had experience working in regular education; were licensed in basic primary and



secondary education; and had knowledge of one of the indigenous languages. According to Colombian law, their salary depends on the number of hours worked in the classroom in each educational cycle of basic primary education (264 hours in cycle 1, which includes literacy training, and 264 hours in cycle 2); 400 hours for each cycle of basic (or lower) secondary education (3 and 4); 220 hours for each cycle of (upper) secondary education (5 and 6). The hourly wage is USD 6.

They received continual training through the following:

- ✎ a three-day (20 hours) introductory workshop on methodology and basic concepts such as creating a learning environment, flexibility, and the characteristics of the learner population;
- ✎ an introductory workshop of two days (14 hours) on didactic interventions involving texts and digital tablets;
- ✎ a one-day follow-up workshop (10 hours) on classroom exercises and active pedagogical methods, with an emphasis on didactic interventions using the Sistema Interactivo, and the contrast between traditional education and the challenge of facilitating meaningful learning processes;

- ✎ a closing workshop and evaluation, with an analysis of the project that lasts one day (8 hours).

Enrolment of Learners

In order to determine the number of learners enrolled in the project, the Secretary of Education database was consulted, as well as the Ministry of Education statistics on illiteracy and incomplete basic and secondary education. Based on this estimate, learners were able to register for classes, which they learned about with the help of the following communication means:

- ✎ Ads on local stations in different indigenous languages and in Spanish;
- ✎ Short texts in indigenous languages distributed in different places where many people come together, with the venue and date of information meetings;
- ✎ Visits to the indigenous shelters, interviews with the leaders of the community, and presentations to the villagers, in different languages;
- ✎ meetings with the principals of the educational institutions;
- ✎ house-to-house visits and neighbourhood meetings with the community. In each of the registra-

tion points, the translators were ready to assist any of those who did not understand Spanish.

Since this had not been done before, learners felt compelled by the invitation to register in different language courses, as well as the use of digital tablets within the classroom. Currently, they are committed to the project for various reasons. First of all, they are drawn by the opportunity to speak in their own language in the classroom and by the use of multi-lingual software that facilitates a classroom environment where four different languages, besides Spanish, are spoken. With regards to literacy, they are motivated by the fact that they are learning to read, write and acquire knowledge pertaining to the Spanish language, Mathematics, Social and Natural Sciences, as well as their own cultures. The educational software videos also allow them to remain engaged. Another positive aspect is that their classmates are from their same community and, in some cases, from their same indigenous reservation. Additionally, they can now support their children in the educational process as the entire family uses the digital tablet to study.

TEACHING AND LEARNING APPROACHES AND METHODOLOGIES

The methodology is interactive-productive. The classroom exercise begins with the projection of the educational software content from the tablet onto the wall with a video projector. Each learner can view the lesson on their tablet while the teacher uses the amplified image to guide the learners. Smaller working groups are organized according to the language spoken by each of the learners. With the printed texts and the software, the learners delve deeper into the contextualized concepts presented earlier by the teachers, using examples, videos, images, and readings. From the constructivist perspective of the Interactive System, the learner's knowledge construction should be based on understanding or, in other words, the establishment of meaningful relationships between the new information and the one he or she already possesses. In regard to information that lacks any meaningful relation to the learner because of the specificity of the subject matter, strategies of didactic intervention must be established. The collective construction of knowledge is privileged in these in-class sessions.

Using these tools, learners engage in individual and group work within and outside of the classroom. The results of these activities are then presented in plenary sessions where they are discussed and enriched by the group and the teacher. As the learners learn to read, write and do basic math, the software

also allows them to study content related to social and natural sciences, civil and multiethnic culture, and human and social development. The learners can take their tablets home to complete individual assignments, study or share new information with their families and communities.

In meeting the challenge of educating multiethnic communities, the programme adopts the following intercultural ethic:

- ✎ the goal is not to assimilate people who have a different culture into a dominant one, but to allow them to conserve their diverse cultural identities;
- ✎ the goal is to ensure an authentic coexistence, since differences can be an expression of personal and cultural authenticity;
- ✎ the respect which a different culture deserves has its roots in the respect to the identity of the people that comprise it;
- ✎ understanding other cultures is indispensable to understanding one's own culture.

Learners follow a pertinent and flexible curriculum of integrated areas which meet basic national education standards. For this reason, learners are continually evaluated based on class presentations of their work, as well as individually, based on the standardized tests that are found at the end of each thematic unit of their textbooks. Depending on their achievements, learners are then promoted by their teachers and given a corresponding formal education certificate of completion.

FUNDING SUPPORT

In order to develop these projects, Fundación Transformemos has signed agreements with the National Ministry of Education and the sub-national Secretariats of Education, which contribute with financial resources, and, in other cases, with international organizations and private enterprises. Given that this is a formal educational process, the entire process is completed through the formal education system, which contributes with school infrastructure and the administrative personnel.

MONITORING AND EVALUATION

In the evaluation of the pilot project, the following is done:

- ✎ Classes are continually supervised through specific monitoring tools by a professional who is permanently assigned to this task;
- ✎ Meetings are held with the principals of educa-



- tional institutions in order to get their feedback and impressions concerning the programme and its implementation, given that they are the ones who are directly responsible for each institution;
- ✎ Meetings are held with teachers in a second 10-hour training workshop in order to receive feedback on the methodology and to cement changes in teaching practice which are oriented toward active pedagogy;
 - ✎ Information on the educational process, impact of technology and logistical aspects are gathered from 10% of the teachers and learners, half-way through the process;
 - ✎ Focus groups - made up of a sample of teachers, learners and principals, chosen according to specific criteria - are used to evaluate the results of the educational process in each cycle;
 - ✎ A statistical follow-up of learners' achievements, including those that graduated, did not graduate or dropped out, is carried out;
 - ✎ After all the steps mentioned have taken place, an analysis is included in a final report which is then used to adjust the educational process to ensure its continuity.

The use of educational software

Transformemos for digital tablets has led to favorable results, thanks to the experience gained in the implementation of Sistema Interactivo Transformemos during the last seven years and the use of the educational software since 2010. These positive results guarantee the continued financial contribution of the State, and the support of

the Minister of Education and the Minister of New Technologies. Moreover, the results obtained have also allowed the cost per learner to remain below USD 300 per year, with which you can purchase a tablet for each learner and teacher. For this reason, the number of young people and adults enrolled as learners has risen from 600 to 3,600, which is an increase of 600%. Another achievement of the programme was that the national and international press has been permanently covering the process. Also, according to drop-out reports of learners, since the adult learners started classes in August, the school drop-out rate of children has decreased considerably. This was a critical problem toward the end of the school year since parents would take their children to work with them. Finally, it is important to highlight that starting from 2014, Sistema Interactivo Transformemos will reach 20,000 young people and adults all over the country through the use of digital tablets.

TESTIMONIES

The programme Transformemos gave me the opportunity to study. Since I can study and do research with the tablet during the night, I have time to spend with my daughter and husband.

Paola Andrea Cavarte (18-year-old learner from the ethnic group Piapoco)

Twenty-three years ago I stopped studying in order to raise my children. Thank God, Transformemos gave us another opportunity. I sell catalog perfumes, so it

helps me to continue acquiring skills that can be helpful in running my business.

Sara Miravan (39-year-old learner from the ethnic group Puinave)

This is incredible. Who would have thought that the indigenous people would have been the first to study with digital tablets and even more surprisingly, in their ancestral languages. This is a stipulation found in our Constitution, but which has never been fully enacted.

David Gaitan Rojas (teacher and translator)

I am happy that this programme has arrived to our Department, especially to the indigenous part. The truth is that we really needed it. There are many illiterate people in this village, so it is a great opportunity for us and our families. The fact that the instructor is of their same ethnic group facilitates the learners' understanding.

Monica Andrea Patino Lopez (teacher from the ethnic group Puinave)

We were in a state of anticipation because on more than one occasion, the programme for adults was offered but not carried out. The novelty of this programme is that the learner takes modules so that he or she can work at his or her own pace using a tablet. Before, many would register and then quickly drop out. It seems that this time, however, that they are very motivated by the programme. It was never heard before that someone would teach them in their own language. The programme is ideal for our context since it helps to elevate the standard of living and the cultural level of the population.

Bernardo Betancur (principal of the educational institution Simon Bolivar)

CHALLENGES

Once the preparatory stage has passed, the first challenge was convincing the elders of the indigenous communities to accept local teachers specialized in ethnic education since they were younger than them. In their culture, the elders are considered «the wise», and «the whites» know more than the natives. Dialogue was needed to help them value human talent from their own culture and region. Another challenge arose when the elders of the communities asked to receive classes in a classroom separate from the younger learners. In this case, we had to make this concession.

The biggest challenge came from the basic and secondary education groups, where the learners of some of the native languages know very little Spanish and the teachers aren't fluent in all of the languages. Although the use of technology can help in this case, this requires that the software have a complete translation of the texts, which is not possible with some of the discipline-specific topics that are difficult to translate but are necessary to reach basic competency standards determined by the Ministry of Education. In these cases, teachers should privilege conceptualizations that are more closely related to their worldview. This is something which should be remedied with didactic transpositions in their native languages, as well as with teaching Spanish as a second language, for which it is necessary to increase class time.

LESSONS LEARNED

A lesson learned was that teachers from these disadvantaged regions should be offered the possibility of redefining, through reflection, their classroom practices in order to replace the traditional methodologies for active learning strategies, as well as autonomous learning which is made possible through the use of educational software.

The use of audiovisual material, like videos and short films, on tablets can improve the classroom environment. It is convenient to include a high percentage of this type of material in the educational software.

SUSTAINABILITY

The sustainability of this project is guaranteed to the extent that learners remained registered in the official national registry so that it becomes the obligation of the State to allow them to continue their studies and to provide the necessary resources to do so.

SOURCES

-  <http://www.transformemos.com>
-  <http://www.transformemos.com/Guainia.html>
-  <http://www.youtube.com/watch?v=x5llitAY7as>

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COSTA RICA

Information and Communication Technologies in Andragogical Mediation



COUNTRY OVERVIEW

Population

4.805 million

Official language

Spanish

Other languages

Maleku, Cabécar, Bribri, Guaymí and Bocotá

Poverty (population living on less than USD 1.25 per day)

3.1%

Total expenditure on education as % of GDP

6.3

Access to primary education – total net intake rate (NIR)

94%

Youth literacy rate (15–24 years)

Total: 98.3%, Male: 97.9%, Female: 98.7%

Adult literacy rate (15 years and over)

Total: 96.3%, Male: 96%, Female: 96.5%

PROGRAMME OVERVIEW

Programme Title

Information and Communication Technologies (ICTs) in Andragogical Mediation

Implementing Organization

Ministry of Education

Language of Instruction

Spanish

Date of Inception

2011

COUNTRY CONTEXT AND BACKGROUND

Education is a major issue of political concern in Costa Rica. When the government disbanded the Costa Rican army in 1948, its facilities were transformed into schools, libraries, hospitals museums, and other institutions. Part of the investment that would have been allocated to the military was instead channeled into education. The government now invests 6.3% of GDP in education, a commit-



ment which has contributed to the achievement of a 96.3% adult literacy rate in Costa Rica.

Despite these achievements, UNESCO's 2011 Education for All Global Monitoring Report found approximately 134,000 young people and adults without basic literacy skills in Costa Rica, 46% of them women. The situation is worst in poorer rural areas where there are fewer learning opportunities. Efforts to promote literacy are, therefore, closely related to endeavours to eradicate poverty, reduce infant mortality, promote gender equality and ensure sustainable development, peace and democracy.

Over the past 20 years, economic activity in Costa Rica's rural areas has diversified, with communities which have traditionally relied on fishing for their income becoming part of the country's main economic activity, tourism. This new context requires people with technological skills. However, the majority of educational institutions in rural Costa Rica have limited access to information and communication technologies (ICTs). The population is far from proficient in the use of new technologies and some adults are reluctant to use them.

The economic and social case for addressing this need is compelling. The greater a country's technological capability the better its economic performance. Improving people's ICT skills, as well as their literacy and numeracy skills, will benefit the whole community. Moreover, securing a quality education for all is essential for social cohesion and inclusion.

PROGRAMME OVERVIEW

The value of ICTs in supporting the learning process and increasing the capacities of students is well understood. This programme seeks to strengthen andragogical mediation in adult education through the use of ICTs.

The ICTs in Andragogical Mediation programme has developed as a result of cooperation between the Department of Research, Development and Implementation (DIDI) of the Directorate of Technological Resources (DRT), the Department of Youth and Adult Education (DEPIA) of the Directorate of Curricular Development (DDC), and the Intel corporation.

The programme was piloted in 2011 at a youth and adult education institution run by the Regional Directorate of Peninsular Education. One year later, it was rolled out in two further adult education institutions. In 2013 it was extended to the Regional Directorates of Education in two areas with severe socio-economic problems, Desamparados and Limón.

The programme encourages students to identify problems within their communities and to consider how skills acquired in their ICT courses can help generate possible solutions. In one case, students identified pollution caused by the dumping of waste as a severe problem for their community. They launched a clean-up campaign to address the issue, creating

posters containing useful information about waste management.

Aims and Objectives

The programme aimed to:

- ✎ Strengthen adult literacy skills and education using ICTs;
- ✎ Develop citizens' productive and entrepreneurial capacities through the use of ICTs;
- ✎ Address the needs of coastal rural communities and other poor areas in Costa Rica;
- ✎ Increase teachers' capabilities and qualifications in the use of ICTs.
- ✎ Institutionalize the programme, so that the use of ICTs becomes an everyday part of teachers' activities; and
- ✎ Implement the programme in a DEPJA institution, in an area of low socio-economic development.

PROGRAMME IMPLEMENTATION

The programme seeks to incorporate ICTs into andragogical mediation in two ways: in the first place, through the use of ICTs in the development of adult education courses, and, in the second, through a module focusing specifically on the use of computers. All educators are trained in the use of ICTs, and professionals in computer science education are hired to teach the module focused on the use of computers.

The programme has four distinct stages: diagnosis; training; installation of the computer lab; and course implementation. In the first stage, the use of ICTs by teachers and students in the area chosen for the roll-out of the programme is analysed. This phase is led by DIDI and DEPJA, using questionnaires which examine, in turn, the students' ICT skills, the teachers' views as to the usefulness of ICTs in education, and the students' opinions about the benefits of ICTs in their learning.

The results of these surveys are assessed by educators and students based at the Integrated Centres of Adult Education (CINDEA), in Paquera, Jicaral and Cóbano, in order to identify issues related to students' access to and use of computers for learning purposes. Once the outcomes of the assessment have been analysed for each community, appropriate training modules are created for the teachers, as well as various workshops covering technologies in knowledge management.

In the second phase of the programme, teachers are trained in the use of ICTs in the following areas:

Technology and Community; Technology in the Workplace; Technology and Entrepreneurship; and Didactic Planning and ICTs. The host institution supports the implementation of the programme and prepares the computer lab, using funds provided by the Ministry of Public Education and the community. Intel donates the laptops, which are installed in each CINDEA of the Peninsular Regional Directorate. Once this is complete, the classes can begin.

In terms of lesson planning, teachers propose mediation activities involving the use of computers and other devices, such as mobile phones and tablets, as part of day-to-day educational activities. For example, English, Spanish and social studies students made a video with their mobile phones presenting the history of a town during colonial times, and explaining how the population used to communicate with foreigners from English-speaking countries. At the same time, computer science teachers work with the students, using ICTs to support and contextualise their learning.

Each course of the programme lasts six months, with students meetings three times each week. On completion of each course, the students make a presentation on a subject relevant to their studies. For example, in the course on Technology and Community, one group of students created flyers highlighting an area which had potential appeal to tourists but which had yet to develop tourism as a source of income and employment.

The students research social issues and develop projects to address them, using their own mobile phones and the resources of the computer lab. They also make videos in which they talk about their experiences.

A wide range of different areas are covered in the programme, including basic literacy and numeracy, post-literacy skills, skills for life, health, training for income generation and poverty reduction, democracy, family literacy and intergenerational learning, the creation of a literate environment, sustainable development, and gender and community development.

Selection of Learners

The programme's teachers are typically university graduates, usually with a specialization in computer science. The programme recruits one teacher for every 25 students. Their salary depends on the level of degree they have attained. University students receive USD 250, teachers with a bachelor's degree receive USD 300, while those with a master's or

PhD get USD 350. Other benefits include economic awards in respect to the years they have worked and the opportunity to develop professionally through training. The training, as noted above, includes subjects such as Technology and Community; Technology in the Workplace; Technology and Entrepreneurship; and Didactic Planning and ICTs, and covers topics such as:

- ✎ Basic concepts of computer science;
- ✎ The use of search engines;
- ✎ Creating graphics, such as maps and postage stamps;
- ✎ Creating flyers, business cards, calendars, etc.;
- ✎ Creating worksheets, including surveys, statistical charts and budget planners;
- ✎ Multimedia management;
- ✎ Creating certificates, evaluation charts, class schedules, etc.;
- ✎ Logo and header design;
- ✎ Designing and updating websites; and
- ✎ Accounting exercises.

Each course involves 40 hours of certificated training, resulting in professional qualifications which support teachers' career development and give them an opportunity to increase their salaries. A blog site – <http://educaciondeadultoscostarica.blogspot.com> – describes each stage of the development process. It also supports the teaching of students, providing a chart that shows students' progress, allowing the teacher to make informed decisions about the pace at which the student can learn. Their development is further supported by additional training on topics related to adult education, including andragogy, neuroscience and adulthood

The students are assessed at the end of the programme, with day-to-day work accounting for 50% of the final grade. The remainder is made up of exams (30%), project work (15%) and attendance (5%).

MONITORING AND EVALUATION

Once members of CINDEA complete their training, they become responsible for managing, designing, implementing, assessing and monitoring teacher training. Diagnosis, evaluation and training are undertaken at a national level. The programme is evaluated through an annual survey of teachers and students, and by institutional visits, during which lessons are observed. The latter task can be carried out by the director of the institution, the school principal or by a national advisor of DIDI or DEPJA. The evaluation reports are submitted to the DRT, together with the students' results. A photographic

record of CINDEA and the participating communities is published on an education website (www.mep.go.cr), alongside a summary on the project's development.

PROGRAMME IMPACT AND CHALLENGES

Impact and Achievements

Participation in the programme has steadily increased since it was piloted in 2011. Fifty students took part in the first year, compared to 150 in the second and 175 in 2013. Furthermore, the students' results have been positive, as has their feedback. The programme has been welcomed by participating communities, and has had the support of churches, non-governmental organizations (NGOs), community centres and schools. These institutions play a significant role in informing citizens about the programme and motivating young people and adults to enroll.

Communities and local authorities also offer support to the programme by providing hard drives and other useful resources. In some communities, the electrical installation of the laboratories is undertaken by public or private electrical suppliers.

The programme's problem-solving approach to learning means the students remain motivated throughout, with 95% completing the programme and achieving a pass grade.

Testimonials

Teaching the use of Word, from the perspective of the needs of adults, was a new experience. In order to teach them, I took my CV and, with it, I explained to them how this tool can be used.

That night, no student wanted to leave the classroom, even though they had to go. I heard phrases such as 'Teacher, I needed this, I lost my job and I am searching for a new one'. 'Teacher, I will write my own great CV and hand it in different places, so that I can get a better job'. Several students copied my CV onto their USB sticks, in order to replace it with their own personal information and they even exchanged their CVs amongst themselves.

Denis Molina Pérez, teacher at CINDEA Paquera

When I started the course, I did not know anything about this field. Therefore, I had the opportunity to learn. The teacher taught us how to use Paint, Word, PowerPoint, the internet, and how to send e-mails. We also learned to communicate among students, down-

load and send assignments, and communicate with relatives who also had internet access.

Everything is better now for me and my family because I have a new job managing a cabin (a small hotel) and there I keep track of clients, through the use of the computer.

As the course started with the basics, I was not scared. Then we started using the computers and, as we had access to them in the CINDEA, it was very easy. We did our assignments individually, but helped each other in groups of other classmates and the professor, in order to help each other. We truly learned a lot.

Johnny Gutiérrez Peralta, 33 years old, student at CINDEA Paquera

Challenges

The main challenge for the programme lies in rolling out delivery to other regions of the country. There is limited access to ICTs in rural areas, and the population in general has little experience of their use. It is also difficult to secure access to essential resources and to identify locations in which to install the computer labs.

Finding qualified teachers for the programme is another challenge. Although universities teach professionals in computer science, they are not specialized in adult education. This is why the programme provides them with training in andragogy, adulthood and neuroscience, among other topics.

As yet, the programme has not been extended to the indigenous territories of Costa Rica.

LESSONS LEARNED

- ✎ The key lessons learned from the implementation of the programme include:
- ✎ Teacher training should be a continuous process, and teachers should be willing to continually learn and innovate;
- ✎ Community coordination is essential for allocating and installing the computer laboratories;
- ✎ Planning and regulations on the use of the laboratory and the computers are necessary for their effective management by students and teachers;
- ✎ Some teachers are reluctant to use technology and to introduce it into the mediation process;
- ✎ Meetings should take place with stakeholders to report on the progress and outcomes, in order to maintain their support;
- ✎ Joint actions should be planned yearly and strictly followed, other than in exceptional cases; and
- ✎ Students are more engaged in the educational

process when technologies are introduced through the use of computers or mobile phones.

SUSTAINABILITY

The DRT builds and creates the laboratories and Intel donates the computers. DEPJA is planning to acquire the necessary equipment for 2016, to support the sustainability of the programme. To ensure the programme reflects emerging trends in technology and its use in education, the programme works closely with universities, research centres, vocational high schools, international organizations and NGOs. There is continual coordination with NGOs and other public and private organizations to increase the range and reach of the programme.

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JAMAICA

AutoSkills

COUNTRY PROFILE

Population

2.769 million (2012)

Official language

English, English patois

Poverty (population living on less than USD 1.25 per day)

0.2% (2007–2011)

Total expenditure on education as % of GDP

6.1% (2012)

Access to primary education – total net enrolment rate

82.4% (2008–2012)

Youth literacy rate (15–24 years)

Total: 91.6%, Male: 87.3%, Female: 96.3%

Adult literacy rate (15 years and over)

Total: 80% (1995–2004), Male: 74%, Female: 86%

Statistical SourcesUNESCO Institute for Statistics, UNICEF
Information by Country, World Bank

PROGRAMME KEY INFORMATION

Programme title

AutoSkills

Implementing organizationJamaican Foundation for Lifelong Learning
(Ministry of Education)**Language of instruction**

English

Programme duration

Ongoing

Funding

Government funding

COUNTRY CONTEXT AND BACKGROUND

Lifelong learning has grown in significance in Jamaica, with national strategies and programmes developed to advance an agenda increasingly seen as crucial. Adult and non-formal education in Jamaica has traditionally been provided by non-governmental agencies run by churches and voluntary groups. Since the 1970s, however, the government has become increasingly involved, through the establishment of the Jamaican Movement for the Advancement of Literacy and its successor organization, the Jamaican Foundation for Lifelong Learning, an agency of the Ministry of Education and Youth. The Foundation

for Lifelong Learning is now the main organization responsible for the delivery of non-formal adult education in Jamaica. The government has also established the National Education Trust the aim of which is to fund programmes of adult education.

At the same time, the government has implemented policies which have resulted in universal primary education – although irregular attendance and drop-outs remain a challenge – as well as improved access to secondary and tertiary education. Both government and private sectors have realized that investment in education and training is essential in order to keep up with the latest developments in technology and remain competitive.

Despite this, educational outcomes do not always live up to expectations. Between 30% and 40% of grade 6 school leavers are functionally illiterate, while only 30% of those who sit the Caribbean Examination Council mathematics exams at grade 11 pass. Poor education outcomes may be one of the factors limiting productivity gains in Jamaica (World Bank, 2003). For example, despite the importance of tourism to the Jamaican economy, poor maths, English and foreign language skills among some categories of workers have a negative effect on the quality of service (CTRC, 2003).

The problem is compounded by the fact that most Jamaicans, particularly those from lower-income families, speak patois (Creole) at home. The formal and non-formal school system provides instruction and evaluation only in standard English, which many Jamaicans struggle to master. Although the government has recognized the issue and sought to address it through teacher training, these efforts remain inadequate to the scale of the problem.

The AutoSkills programme was devised and set up in response to this background of unsatisfactory performance and poor learning outcomes in mathematics and English. Its aim is to address directly the issues that hinder productivity, growth, and lifelong learning in general in Jamaica.

PROGRAMME OVERVIEW

AutoSkills is a computer-based programme which aims to improve the literacy and numeracy skills of

participants, taking them from the most basic level to grade 13. It is designed to engage those learners who are hardest to reach or who face the most persistent challenges in accessing education. The programme is run by the Jamaica Foundation for Lifelong Learning (JFLL), which provides a live facilitator to offer any assistance that the learner might need in using the AutoSkills computer software. It is aimed at learners in all JFLL programmes, enabling them to use the interactive computer programme to practise the skills they learn in the classroom. By using the programme alongside their classroom studies, students can advance faster.

The AutoSkills programme was developed by educators for learners of all ages and abilities. It has two main strands, reading and maths, presented in a way that is intended to improve learners' intellectual skills. It is aimed, in particular, at students who struggle with literacy and numeracy, giving them the means to make lasting improvements that can be transferred immediately into real-life contexts. The programme's software licence was purchased in 2007 with the intention of complementing the traditional chalk-and-talk method of lesson delivery. Training of facilitators and tutors on the programme began in 2008, since when around 70 people (external clients as well as JFLL teachers) have been trained. JFLL uses the software to support the face-to-face delivery of its foundation literacy and numeracy programme.

The learners are helped to develop greater fluency by the programme's focus on improving their accuracy, consistency and processing speed – what it terms «automaticity». Automaticity involves learning to process complex information quickly and with little effort. Once a learner has developed automaticity in reading and maths, he or she can begin to focus on higher-level learning, such as comprehension and strategic competences. The individualized training streams, self-adjusting intervention component, and the focus on motivation and building self-esteem and confidence, help learners to re-engage in learning, and to do the groundwork necessary to achieve their academic goals.

AutoSkills makes it easier for the learner to interact with a computer by giving learners instruction via a set of headphones. The programme, which is available only at centres that have computer labs, is available all day, from Monday to Friday during term time. Learners can choose when and for how long they use AutoSkills, but they are given a recommended duration which reflects the demands of their course. They can use AutoSkills for as long as they need to master their course.

Aims and Objectives

The objectives of the programme are:

- ✎ To build the self-esteem and confidence that can help learners to re-engage in learning, using individualized training streams, self-adjusting intervention, and a focus on motivation;
- ✎ To help learners do the groundwork necessary to achieve their academic goals by developing their fluency in the foundation skills of reading and mathematics. Learner responses are timed in milliseconds as part of the skill mastery criteria to precisely measure whether decoding and maths facts have been «automatized»; and
- ✎ To give learners multiple opportunities to become fully proficient in each skill area through a methodology that involves tutorial, practice and training. Mastering foundation skills to the level of automaticity ensures that the resulting gains in ability are both significant and permanent. The idea is that the basic components of reading and mathematics, such as letters, syllables and maths facts, must not only be learned, but learned to such a level that processing becomes automatic.

PROGRAMME IMPLEMENTATION

Content, Methodologies and Evaluation

AutoSkills is an ICT-based programme which offers courses in reading and mathematics from grade 1 to 13. The programme is delivered in 45-minute sessions, with classes delivered electronically via computers located at the JFLL East Street Adult Education Center. The programme runs across the academic year on a termly (three-month) basis. The duration of the course depends on where on the continuum (grade 1-13) the learner is placed at the outset of the course and the desired point of exit. The learner can decide when and where they want to learn and when they want to end. When the learner accesses the programme for the first time, they complete a diagnostic assessment of their skills level. As they progress through the programme, the system adjusts according to their level of performance.

The content of the curriculum is predetermined by the software package and all work is completed electronically, online, by learners. The course materials, which were developed by AutoSkills, are only available electronically. There are no printed materials.

JFLL uses the programme to support face-to-face delivery. The software assesses the learners' progress at the end of each level and automatically provides feedback to the learners as they progress

though the programme. A tutor also monitors progress and provides individual support as needed. The teachers delivering the face-to-face programmes can access the reports generated by AutoSkills to inform their teaching. Learners take a locally developed paper-based examination at the end of their training programme.

Recruitment and Training of Facilitators

Learners accessing the programme are already enrolled on JFLL programmes and use AutoSkills to support and reinforce the face-to-face delivery of their courses.

There is one facilitator for every 15 learners taking part in AutoSkills. Facilitators are JFLL employees, working on either a part-time or full-time basis and paid with government funds. Although they are trained in the use of the software, they must have a diploma-level qualification in information technology. Training in adult literacy is an asset.

PROGRAMME IMPACT AND CHALLENGES

Seventy learners have participated in the programme since it began. Their feedback suggests that the programme has supported them to progress at a faster rate than would otherwise have been possible. They appreciate the non-intrusive nature of the programme, and how it allows them to work at their own pace. Some were relieved that they could work independently without being ridiculed by their peers and without causing disruption to their classmates.

Teachers responsible for the face-to-face component of the JFLL programmes report that learners who participate in AutoSkills feel more empowered and participate more during lessons as a result. The self-directed nature of the training means that learners are also more engaged, maintaining an active interest in the programme. AutoSkills complements the existing curriculum, often reinforcing what has been taught in the classroom and giving learners an opportunity to hone their new skills.

One of the challenges the programme faces concerns language and the difficulty some learners have with the accent and tone of the electronic tutor. This can be attributed to the difference between the standard English used for instruction and the non-standard patios spoken by many Jamaicans in everyday life. This can have a negative impacts on participants' response to instructions and their speed in carrying them out.

LESSONS LEARNED

The programme highlighted the need for teachers' knowledge and use of ICTs to be fostered through continuing teacher training programmes. This will, naturally, increase the number of facilitators for the programme.

It would be useful too if administrators and teachers were able to make adjustments to the individualized training programmes. This would allow, for example, the teaching of «fractions» to be carried over from the classroom into the AutoSkill training. It is important that the online delivery doesn't replicate face-to-face delivery but, rather, complements it so that it is synchronized with classroom content and the pace at which it is taught. This would have a particularly positive impact on learners who are struggling with the material.

SUSTAINABILITY

AutoSkills is already a critical component of JFLL's programme delivery. A facilitator who has been trained in the use of the software is assigned to the institution where AutoSkills is being delivered. Learners participate as a timetabled part of their normal course of study.

JFLL should now increase the number of sites that offer AutoSkills. This will increase the numbers of learners who are able to access the programme at different times and locations. A formal monitoring and evaluation process, tracking learners on completion of all JFLL programmes, is planned.

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El Maestro en Casa



COUNTRY PROFILE

Population

3.8 million (2012)

Official language

Spanish

Poverty (population living on less than USD 1.25 per day)

2.1% (World Bank 2010)

Total expenditure on education as % of GDP

3.5%

Access to primary education – total net intake rate

94%

Youth literacy rate (15–24 years)

Total: 97.1%, Male: 96.8%, female: 97.3%

Adult literacy rate (15 years and over)

Total: 91.5%, Male: 92.2%, Female: 90.9%

Statistical Sources

World Bank, World Development Indicators, UNESCO Institute for Statistics

PROGRAMME KEY INFORMATION

Programme title

El Maestro en Casa (The Teacher at Home)

Implementing organization

Instituto Panameño de Educación Por Radio (IPER)

Language of instruction

Spanish

Date of inception

2001

Programme partners

Private companies, banks, organizations, foundations, private individuals and public government institutions. These include the Sus Buenos Vecinos Foundation, Cable and Wireless, and Global Bank.

Funding

Private donors

Annual programme costs

USD 232,000

Annual programme cost per learner

USD 60.00



COUNTRY CONTEXT AND BACKGROUND

Education has improved significantly in Panama in recent years. According to UNESCO's Education For All 2013–14 Global Monitoring Report, Panama is on target to achieve primary school enrolment of 95%, gender parity in education and an adult literacy rate of 95%. There is still work to be done, however, to improve secondary education enrolment, which remains 19% below UNESCO's target figure.

A high student drop-out rate means that just over three-quarters (76%) of young people in Panama enroll in secondary school. Researchers at the University of Panama link student drop-out and school failure to poverty (Méndez, 2008). Their study found that the higher the poverty rate of a district, the lower its education level.

One indicator of this, mentioned in the EFA Global Monitoring Report, is the 15% gap between the mathematics and reading skills of children living in urban areas and their rural counterparts. The lower literacy and numeracy rates reported in Panama's remote rural areas have other explanations too, such as the inaccessibility of educational institutions.

The Panama Institute for Radio Education

The Panama Institute for Radio Education (IPER) is an NGO founded in 2001 by a priest, Fernando Guardia

Jaén, whose work stems from a background as the director of the Javier school between 1968 and 1975 and as director of the Catholic radio station Radio Hogar. Guardia saw the potential value in using radio to reach people living in remote areas and worked with colleagues from Radio Hogar to create IPER and, in turn, the education programme, El Maestro en Casa (The Teacher at Home). The Institute aims to reach people who dropped out school but would like to continue their education. It targets, in particular, people recovering from addiction and those living in remote rural areas with few educational opportunities.

IPER is chaired by a board of 10 directors, and has 13 administrative staff. Five IPER offices serve eight provinces (Chiriquí, Darién, Los Santos, Herrera, Panamá, Coclé, Veraguas and Colón), supported by a staff of 250 volunteers (including retired school teachers, professionals and local college students).

PROGRAMME OVERVIEW

El Maestro en Casa is an education programme which uses distance learning to engage young adults who did not complete their schooling. The classes are transmitted through radio programming and educational videos. The learners follow sets of instructions to complete the exercises on their own. One day each week the participants meet in learning groups where a volunteer clarifies any concerns

that arose during the week. In 2013 there were 300 groups in 250 communities from eight provinces across Panama.

In 2014, 15 radio stations were collaborating on El Maestro en Casa (Radio Crisol; Radio Hogar; La Mega Panamá; Radio Maria; Radio Evangelio Vivo; Radio Católica; Voz sin Fronteras; Radio Ancón; Radio Stereo Oeste; Ondas del Canajagua; Radio la Primerísima; Radio mi Favorita; Radio Veraguas; Radio mi Preferida; and Radio Panamá). All give their time and transmit the classes for free.

The programme takes inspiration from the methodology of ECCA, a radio-based educational system created by Francisco Villén in Spain in the 1960s. The method combines radio technology with more traditional learning using books and notebooks. The teacher explains the exercises to learners through the radio and the learners carry them out independently. El Maestro en Casa has, in turn, been replicated in Central American and Caribbean countries such as Costa Rica, Guatemala, Dominican Republic and Honduras. The programme runs independently in each of the countries.

Aims and Objectives

- ☞ To extend education to all the segments of the population;
- ☞ To use distance education to reach people who live in remote areas or have mobility problems;
- ☞ To give people who dropped out of school a chance to continue studying; and
- ☞ To empower parents to help their children with their education.

PROGRAMME IMPLEMENTATION

Teaching and Learning: Approaches and Methodologies:

The programme's courses are structured in four levels: literacy (equivalent to the grades 1, 2 and 3); primary (grades 4, 5 and 6); lower secondary (grades 7, 8 and 9); and high school (10, 11 and 12). IPER develops course materials, radio programmes and videos to accord with the minimum knowledge required at each grade level, in line with the Youth and Adults Programme of Panama's Ministry of Education (MEDUCA). To pass from one level to another learners need to score at least three out of five in every subject. However, there are some differences between the levels.

At literacy, primary and lower-secondary levels, there is a 30-minute pre-recorded class broadcast each day

from Monday to Friday. The classes are developed by teachers specializing in each subject. The learners work on the exercises during the radio programme and present the results in the weekly meeting where they are assisted by a volunteer. At the end of each quarter, the learners must submit a written exam for each subject. Video lectures are, additionally, available for middle-school (lower-secondary) classes, including 15 in English and 15 in mathematics.

The high-school classes follow the self-instruction methodology, using books, exercises and activities that enable learners to understand the topic without additional support (all approved by MEDUCA). The learners sit an exam at the end of every subject. Unlike at the other levels, however, student meetings are not supported by volunteers. Instead, learners compare their results with the answers provided at the end of each self-instruction book.

The high-school courses involve a good deal of self-assessment, as well as exercises, glossaries and case studies based on everyday life to support their greater understanding. The curriculum also requires learners to submit a business plan to implement in their communities, in order to foster entrepreneurship.

In addition to the radio classes, learners can access educational videos on CD and via the programme's webpage. The CDs contain 165 recorded classes at primary level and 137 at lower-secondary, as well as 30 mathematics lessons and some videos on learning English. Learners can use the webpage to communicate with the volunteers, through Facebook or e-mail.

Recruitment and Training of Volunteers

The volunteers who participate in El Maestro en Casa attend eight hours of training, which gives them information essential to their role, such as the objectives of the programme, their rights and responsibilities as participants, the methodology used at different levels of the programme, and its administrative requirements. The volunteers must be willing to help other people and to commit in writing to volunteering, and have a high school diploma or higher education certificate.

The volunteer is responsible for bringing all the learners together once a week. At the meeting he or she must encourage them, answer their questions and confirm that they have done their homework. Volunteers can be university students or retired people, even former students of the programme. In some remote areas, former middle-school students



have become volunteers and have received scholarships to continue their high-school education.

Recruitment and Enrolment of Learners

To be eligible for the programme, learners must present their ID card or birth certificate, original proof of their academic credit, and their primary school certificate. Adults unable to supply this documentation can take a test which places them at a grade between 3 and 7. For higher grades, learners must submit an elementary or middle school certificate.

MONITORING AND EVALUATION

El Maestro en Casa does not, at the moment, have staff with the training or capacity to undertake evaluations, though they are able to perform more basic forms of monitoring and evaluation.

The programme monitors the number of participants who pass the courses and those who have to repeat them. In addition, learners are surveyed every three months to ascertain their levels of satisfaction with the programme, while coordinators meet to discuss solutions to any problems that arise. Each staff member completes a self-assessment and interviews with volunteers are conducted to gauge their feelings about the programme.

In 2014–15 the programme carried out additional surveys of learners and volunteers to gather information about their economic situation, and marital and family status that could provide a baseline to

measure the programme's impact on learners' lives and environment.

PROGRAMME IMPACT AND CHALLENGES

Impact and Achievements

Since the programme's inception, more than 24,000 young adults have matriculated and satisfactorily completed one of the levels. Twenty-five textbooks have been produced and 990 radio classes have been recorded. The programme was initially implemented in the Coclé province and offered only at grade 4, 5 and 6. It has since extended to other provinces and includes basic, lower-secondary and high school grades within its remit. The Ministry of Education has allowed El Maestro en Casa to offer a bachelor of commerce, with an emphasis on small and medium-sized enterprise.

The programme received the recognition of the Inter-American Development Bank (IDB) as one of the 12 finalists (out of 496 applicants) for the 2013 Juscelino Kubitschik price.

Testimonials

The courses of El Maestro en Casa have significantly helped me and my children, as well as my colleagues. They've encouraged me to continue with the courses. Thanks to you I will graduate from ninth grade.

Mariela Hernández,
Cascajal, 2012

My experience as a volunteer with the El Maestro en Casa programme has been very rewarding. To know you are helping people to understand something that will be very useful in their future lives is a gift!

Rocío de Cohen
Voluntaria de primaria y premedia
Ciudad de Panamá, 2014

Challenges

El Maestro en Casa started out with just 164 learners. Nowadays, it is run from five IPER offices around the country, with more than 2,000 learners registered in the first quarter of 2014 alone. This rapid growth represents a big challenge to the programme. More financial and human resources are needed to keep the programme running, as well as to overcome difficulties posed by limitations to internet and radio signal access. More financial resources are also needed to cover the transportation costs of volunteers travelling to remote areas. The programme needs a central, metropolitan office to store the books and information it has amassed during its expansion. More volunteers are also needed to meet the needs of some groups which can have as many as 25 members, all requiring individual attention.

El Maestro en Casa is working to design software which can compile the scores of learners in real time; and to increase its presence in the country's most isolated and remote areas.

LESSONS LEARNED

The methodology used by the programme, combining distance learning with a strong ICT component, including radio and video, is a useful model of how education can reach out to remote areas. The radio programmes are transmitted at a fixed time, but the video lessons give participants the opportunity to adapt their learning to their daily lives, thus increasing their motivation. The model, however, remains a blended one. Traditional methods, such as reading books and interacting with other students, are crucial, as is the guidance of teachers.

The programme works because of the commitment not only of programme staff and volunteers, but also of the communities in which it is based. Sharing the programme experience with influential people, such as religious and political leaders, mayors, retired professors and the heads of local schools, has helped recruit more learners, gain their support and develop their sense of ownership.

SUSTAINABILITY

El Maestro en Casa is sustained by private donors to whom the programme reports through audited financial statements. Each year, private donors and their families are invited to a fund-raising event. Radio station owners are invited to a lunch intended to stimulate new partnerships. Collaboration with radio stations prepared to transmit programmes for free is essential to the programme's sustainability.

The programme is currently in discussion with a television channel about turning radio classes into videos to be broadcasted on television or the internet, or used in remote and isolated communities in the form of DVDs.

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- ✉ Math class (Video): <http://www.youtube.com/watch?v=k3kzMoHnLBM>

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AlphaRoute

Help | My Mentor | My Mailbox | My Note Pad | My Word List

AlphaRoute Home Articles and Stories Do Activities Take Courses Share Ideas Assess Skills Explore the Internet Deaf Resources

Home

Articles and Stories

- Newspapers
- Native Creation Stories
- Access Centre Stories

Do Activities

- Employment Area
- Activities to Print
- Games

Take Courses

- Online Courses

Share Ideas

- Chatrooms
- Discussions

Assess your Skills

- Demonstrate Your Skills

Explore the Internet

- Learn to Use a Search Engine
- Cyber Search
- Links to the Web

Get Started

- Listen to a welcome message

Deaf Resources

Try activities in ASL (American Sign Language) and see other resources designed from Deaf cultural perspectives.

COUNTRY PROFILE: CANADA

Population

34,994 000 (2013, UNESCO)

Official languages

English and French

Poverty (population living on less than USD 1.25 per day)

9.6 % (2007–2011, UNICEF)

Total Expenditure on Education as % of GDP

3.2

Percentage of adults scoring at each proficiency level in literacy (OECD Skills Outlook 2013; Level 1 represents the lowest level of proficiency, Level 5 the highest):

Below level 1: 3.8 %

Level 1: 12.6%

Level 2: 31.7%

Level 3: 37.3%

Level 4: 12.8%

Level 5: 0.9%

Statistical Sources

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World Bank: <http://data.worldbank.org/country/canada>

PROGRAMME KEY INFORMATION

Programme title

AlphaRoute

Implementing organization

AlphaPlus

Language of instruction

English, French and deaf sign language

Date of inception

1996

Programme partners

Canada National Literacy Secretariat; Ontario Ministry of Training, Colleges and Universities; Ontario Ministry of Education and Training; the Independent Learning Centre; the Knowledge Connection Corporation; George Brown College; the Community Advisory of Anglophone,

Francophone and Deaf Educators; Réseau Interaction Network; and AlphaPlus

Funding

Ontario Ministry of Training, Colleges and Universities (formerly the literacy branch of the Ontario Ministry of Education and Training)

Annual programme cost

C\$60 million

Annual programme cost per learner

approx. C\$1,500

COUNTRY CONTEXT AND BACKGROUND

Canada's education system is widely regarded as among the world's best. Canada is one of the top three countries in the Organization for Economic Cooperation and Development (OECD) in terms of per capita spending on post-secondary education, and students in all jurisdictions score consistently high on international tests. Education in each of Canada's provinces and territories has three tiers: elementary, secondary, and post-secondary. All provide free, universal elementary and secondary schooling for Canadian students.

AlphaRoute was launched in 1996. Its mission was to support adults who were unable to attend conventional classroom-based courses to access literacy learning. The 1996 International Adult Literacy Survey prompted the federal government to set priorities for adult literacy and to make funding available to support provincial governments in addressing them, contributing to the creation of programmes such as AlphaRoute. AlphaRoute's solution to the problem was to create an improved distance learning offer, through its primary online literacy programme.

AlphaRoute began in 1996 as a pre-pilot project called Literacy Students as Online Learners. A scaled-down, stand-alone version of AlphaRoute can be found on the Ontario government's Employment Ontario website: <http://www.tcu.gov.on.ca/eng/training/literacy/flexible.html>

PROGRAMME OVERVIEW

Beginning life in 1996 as a pre-pilot project called Literacy Students as Online Learners, AlphaRoute was devised as a distance learning website to enable adult literacy learners to benefit from the emerging e-learning culture and to meet other learners online. It was developed for the Anglophone, Deaf, Aboriginal and Francophone streams of Ontario's Literacy and Basic Skills programme, which helps adults in the province develop and apply literacy, numeracy and digital skills. Some 20,594 adult lit-

eracy learners and 1,861 mentors registered to use AlphaRoute in the period between 2001 and 2011. AlphaPlus became involved in the programme in 1998 and assumed management of it in 2000.

AlphaRoute was never used purely on a distance learning basis, however. Funding criteria meant that agencies were paid only for the time during which students were physically present on-site. While the programme was certainly used from a distance, it was not possible to properly study and document that use.

AlphaRoute was, therefore, used primarily on-site and in blended delivery models, while the tracking of student hours spent online was explored by the funders. In 2008 the funders decided to invest in a different distance delivery model, called e-Channel, and funding for AlphaRoute was withdrawn, meaning it was only possible to maintain work already developed.

Aims and Objectives

AlphaRoute was devised, in part, as a research project to determine if technology-enabled literacy education could promote learners' skills development and independence. Its objectives included:

- ✎ Integrating technology into literacy programmes;
- ✎ Applying literacy skills in daily life;
- ✎ Offering literacy learners more flexibility in learning in order to meet individual circumstances, preferences and needs;
- ✎ Increasing active participation of learners and creating more opportunities for collaborative learning; and
- ✎ Offering support and access to user-friendly administrative systems, responsive to individuals' needs.

PROGRAMME IMPLEMENTATION: APPROACHES AND METHODOLOGIES

Textbooks, web-based materials, internet access, various software programmes, and other web-based resources were used alongside AlphaRoute in a blended learning approach. The programme incorporated both distance learning and on-site study. As it developed, different delivery models were used and text-based resources were developed to complement AlphaRoute activities. Commercial software CD resources were used to assess students' readiness for online learning. These resources, which became accessible to adult literacy programmes in the early 2000s, complemented the online AlphaRoute con-



tent, which extended computer-based learning into online learning.

Activities

AlphaRoute engaged learners in a range of activities which varied in terms both of content and function. These included what were, at the time, new digital skills, such as drag and drop, clicking on radio buttons, basic keyboarding, and accessing the web to undertake research. The content was suitable to Canadian users and adjusted to the reading levels of the students on the programme. Audio support was included for all activities at levels 1 and 2 and was available as an option at the other three levels. Many activities also included video support – a significant innovation in the years before the launch of YouTube in 2005. In general, activities aimed to develop skills useful in a literacy learning environment. For example, by engaging in an activity involved trip planning and documenting, learners would be engaged in developing skills relevant to geography, mathematics, research, and critical thinking and observation.

A full curriculum was never developed. However, a tool for developing student learning plans allowed teachers to search and add activities to students' individual learning plans. Some activities were automatically updated, while teachers graded and provided feedback on others.

The level of activities, including the length of sentences and the type of vocabulary used, were generally made appropriate to each level of study. The freedom to choose activities, to complete them at one's own pace, and to repeat them if necessary,

were also components key to the success of the programme.

After the pilot phase, when AlphaRoute was in full development, a matrix was rolled out for five levels and incorporated into AlphaRoute's learning management system. Community content developers were funded to create learning activities to match the matrix levels and content areas.

Discussions

Early on in AlphaRoute's development, there were three discussion areas in a part of the learning environment called «the café». All three were designed to provide students with a place to learn transferable skills and to interact online with their peers. During the pilot phase, learners based in different places and working at different levels formed communities of interest within which they exchanged pieces of writing, offered critical, yet supportive, feedback on each other's work, and engaged in debate. This early use of the Café discussion areas was supported by the pilot mentors.

In the next phase, after the pilot, online learners took more control. They found the discussion forums useful as places to meet and engage with other students from across Ontario. Some took ownership of the forums, facilitating the content and the flow of the discussions. It was exciting to see learners making the discussion space their own and using it in a creative way. Learner-generated content to emerge included a mystery novel and two chain stories (stories told by a number of different authors). One learner explored with others ways to be healthy, while another became a host of «chat parties». This

area became, in effect, the learner development area of AlphaRoute.

Cyber Search

In the first stage of AlphaRoute's development, an internet search activity was presented every two weeks, often with audio and visual support, to engage AlphaRoute learners in using the web to search for information. Eventually, a standard set of search activities was developed and made available so that learners could access them at any time in the Cyber Search area of the site. Learners were introduced to a topic and/or website and invited to conduct research on it, reporting their findings in the discussion area. In later versions of AlphaRoute, set discussion topics were dropped and topics of interest introduced as required, according to need or interest.

Chat

The WebBoard platform provided one basic chat room, with an option for private chat. It meant learners had a live, real-time place in which to meet AlphaRoute students from across Ontario and Canada.

On-site support was vital in helping learners, who were often using a username and password for the first time, to sign on to AlphaRoute. It ensured they had safe, guided access to AlphaRoute, orientating them to their new learning environment, and making links between their goals as learners and what online learning can offer. Help and support was available as needed and requested. There was also technical support for educators, accessible via a toll-free line to AlphaPlus. This proved critical to the success of the programme. Learners, on-site and distance mentors, and facilitators all commented on the need for quick, reliable and friendly access, on demand.

Short Online Courses

In 2005, AlphaRoute changed its content development criteria, moving away from hard-coded Flash-based activities and using the discussion forums to develop and deliver short four-week online courses. Learners and educators were enthusiastic about the courses, but found the discussion platform unsuitable for online course delivery. AlphaPlus began to explore learning management systems and developed a number of online courses for AlphaRoute students using the Moodle learning platform.

Between 2006 and 2008, 24 online courses were developed and delivered by contracted adult liter-

acy educators. Funding for these courses stopped in 2009 when Ontario's e-Channel distance literacy learning initiative was launched. AlphaRoute's online courses served as a platform from which learners and educators could do more distance learning courses online, including courses that were purely distance learning. It taught them the time-management and goal-focused skills required in online learning.

INNOVATION IN ALPHAROUTE

AlphaRoute was unique in Canada, particularly in the period between 1996 and 2008, because it did all of the following:

- ✎ It targeted adult literacy students wanting to learn online;
- ✎ It offered adult literacy students ongoing mentor support from trained Literacy and Basic Skills (LBS) programme educators;
- ✎ It offered ongoing learning opportunities which complemented and reflected the learning goals of adult literacy students;
- ✎ It created an online community for adult literacy students to learn online, together within a password-protected learning environment;
- ✎ It provided opportunities for adult literacy students to develop leadership skills within a pan-Canadian community;
- ✎ It provided Canadian online content for adult literacy students; and
- ✎ It provided AlphaPlus with research data about the state of e-learning in Canada.

AlphaRoute Training

After the pilot phase, when AlphaRoute was rolled out to the Ontario literacy field, mentor and administrator training was delivered using a synchronous (meaning teachers and students had to be online at the same time) e-classroom called Saba Centra. The delivery of online training was fairly new to adult educators and using Saba Centra to deliver AlphaRoute training created a level of expectation for online learning at programme management level. Later on, AlphaPlus provided AlphaRoute training via CD-ROM and other support resources, including AlphaRoute user guides. The guides provided a comprehensive overview of the functions and features of AlphaRoute and how they worked, as well as basic technical troubleshooting guidance. Five PDF guides were available to registered mentors, via a Mentor Toolkit link within AlphaRoute.

The Mentor Toolkit was a support and management site for AlphaRoute mentors. It included links to the

students' portfolio results, word lists, registration and assessment tools, the user guides, the Café area, email facilities, and the AlphaRoute village of learning activities. There was also support information to help mentors and other staff develop the learning activities and better tailor them to the learning aims of the students.

Agencies could choose how they wanted to receive training through the AlphaRoute learning environment. Options included self-training using the AlphaRoute training CD-ROM and accompanying support resources, face-to-face training in a computer lab environment at the programme's site, and live Saba Centra training scheduled to suit the needs of the trainees. Much of the initial AlphaRoute mentor and administrator training was delivered live and recorded online using Saba Centra by AlphaPlus. Saba Centra training is managed by training network Contact North: (<http://www.elearntube.ca/video/470/e-Channel-Guided-Tour>)

The agencies' choice of options was determined by whether or not staff on-site were already using AlphaRoute and could support newer mentors. As educators became more «web-savvy», the need for intense AlphaRoute training declined. And as more and more literacy resources became available online, use of AlphaRoute began to decline, with the site used less as a learning management system and more as a repository of online learning activities.

Enrolment of Learners

AlphaRoute engaged a wide range of vulnerable and hard-to-reach learners, including deaf adults, adults with disabilities, adults living in isolated areas, and adults whose schedules did not permit them to participate in conventional courses. The learners were adult literacy students on funded programmes, introduced to online learning through AlphaRoute by their programme staff. Funders encouraged literacy programmes to introduce students to AlphaRoute and to support their ongoing engagement with the site as a way of furthering the development of online learning in funded literacy programmes. Between 2000 and 2001, AlphaPlus delivered training to literacy programme staff in an effort to encourage them to register their students, while funders offered financial incentives to programmes to promote AlphaRoute use and increase student numbers.

The recruitment strategy for the AlphaRoute pilot made use of flyers, inserts in local papers, radio advertisements, community facilitators, word of mouth, walk-ins, posters, open houses, door-to-door

campaigns, local workshops, and follow-up with key contacts.

MONITORING AND EVALUATION OF THE PROGRAMME

AlphaPlus was required to report the number of new learners who registered to use AlphaRoute each year to the Ministry of Training, Colleges and Universities, which usually set an annual target of 2,000 new registrations. Evaluation was data-based and informed the future funding of distance learning within adult literacy in Ontario, as well as its long-term direction. At the literacy programme level, the Ministry's monitoring included assessment of the numbers of students using AlphaRoute, as well as learning gains in the area of computer use. When the online courses were introduced, students who wanted to earn a completion certificate for each course were required to answer a four-question evaluation. The data from all students was compiled and analyzed by AlphaPlus staff and reported to the Ministry.

The mentors were not evaluated by AlphaPlus, other than in the initial piloting, because their responsibility was at the individual programme/agency level where they were supported and matched with learners. AlphaPlus was, however, able to monitor the numbers of mentors by programme and interact with them during training and through online support, as required.

AlphaPlus staff coordinated the development of content, training and online support for AlphaRoute, and ensured it was of a high quality. The literacy agencies oversaw the use of AlphaRoute by their staff, volunteers and learners, while AlphaPlus registered mentors and learners on behalf of the agencies.

AlphaRoute was developed on an access database and later attempts to upgrade this database were not funded. This limited the amount of data that could be accessed for the purposes of monitoring and evaluation. AlphaRoute was project-funded with annual reporting usually based on the number of new content activities developed, the number of new learners and mentors registered, and, later, feedback on online course numbers and evaluations. AlphaRoute was also usually funded to supply research data and information on trends, and the resulting reports provided further data for evaluation.

Assessment Methods and Instruments

Learners wanted prompt feedback on how they had done in the activities. Some said they were learning



Deaf site



Aboriginal site



French site



English site

faster because the system told them immediately when they had made a mistake and highlighted the mistake in a different colour. On the French language site, when learners made mistakes, they were told «bel effort» (beautiful effort), and directed to try again or to get advice from a mentor. Learners liked this – it validated their efforts, even when they made mistakes. They felt encouraged to try again.

Students were also able to use a web-based assessment resource – the AlphaRoute Placement Tool (APT) – which they could work through at their own pace to determine when they had reached their skill level in reading, writing and numeracy activities. Mentors or administrators could register students to access the tool independently of their registration in AlphaRoute. The initial intent was to assess the students' ability and comfort with learning online to determine whether AlphaRoute was right for them and, if so, what level of activities should be included in their AlphaRoute learning portfolio. The APT was intended to stand apart from AlphaRoute. However, over time, it was incorporated into the learning environment. APT ceased to be available when AlphaPlus stopped managing AlphaRoute in 2012.

Online and phone surveys, carried out during 2002–03, found that practitioners valued AlphaRoute, but that they struggled with some of the technological requirements and with the time demands of learn-

ing fully about the resource. At the same time, an AlphaPlus study of AlphaRoute adult literacy learners reported high levels of satisfaction with AlphaRoute as a learning environment and highlighted the transferable skills gained as a result of online learning.

PROGRAMME IMPACT AND CHALLENGES

Impact and Achievements

The majority of learners were soon able to sign on and navigate the website. Within six online sessions, they reported being comfortable with the site, that they understood the various tools and that they were able to decide what to do and where to go next. Students learned to become less reliant on face-to-face teaching and benefited from the emphasis on guided independent learning. Facilitators directed students to appropriate resources and tasks, leading to learning outcomes that enabled them to use information and communication technologies.

In Ontario, the 304 adult education centres undertake all Ministry-funded adult literacy programmes in the province. AlphaPlus was able to track the number of learners and mentors at each centre and used that data to plan promotion, training and content development. The centre data was also used by the Ministry to track the integration of online learning by agency. When AlphaPlus stopped managing

AlphaRoute, it shared the cumulative national statistics for AlphaRoute usage, as stated in the table on page 152. This table represents the final national statistics, showing use of AlphaRoute between 2001 and 2011. Over this ten-year period, 20,594 adult literacy learners and 1,861 mentors registered to use AlphaRoute

Lessons Learned

AlphaRoute was conceived, developed and delivered to adult literacy programmes in Ontario, and eventually across Canada, as an online learning environment intended to introduce and support adult students and educators in experiencing and benefiting from online and distance learning. Throughout its pilot phase and after, until at least 2005, AlphaRoute was a unique learning environment. It was sought after by other provinces as a source of accessible online literacy activities. As more online learning activities were developed commercially, as well as by the not-for-profit sector, demand for AlphaRoute diminished.

Nevertheless, AlphaRoute acted as an introduction to online learning for a significant number of adult learners and educators across Canada. It was funded and developed as part of a National Literacy Secretariat and Ministry of Training, Colleges and Universities strategy to ensure that literacy programmes and their staff and learners kept pace with the emerging digital world. AlphaRoute laid the foundations for e-Channel, the current delivery system for adult literacy distance learning in Ontario. It also, in its early stages, inspired many American adult literacy educators to developing their own online learning environments, notably the Learner Web (<http://www.learnerweb.org/infosite/index.html>) and USA Learns (<http://www.usalearns.org/>).

AlphaRoute introduced educators and students to the potential of learning management systems. It also provided opportunities for seasoned educators to apply their expertise in literacy content development to online learning by creating the online content for the programme. The strategy developed by the MInistry and the National Literacy Secretariat for the delivery of AlphaRoute ensured simultaneous capacity investment in Ontario's literacy field by engaging educators in the content development, piloting, administration and delivery of online learning, while, at the same time, providing opportunities for learners to explore and extend their capacity to learn online. The result was a significant move forward in terms of the literacy programmes' engagement in online learning.

Funding arrangements for AlphaRoute often included a research component, posing questions about the level of interest in online learning, its efficacy and its impact on adult literacy learners. Numerous research reports resulted, informing decisions about funding, distance delivery and online content development not only in Ontario but also in other jurisdictions that looked to AlphaRoute for trends and possibilities.

Although it has now been significantly scaled down and is no longer managed by AlphaPlus, a standalone version of AlphaRoute is still available to literacy learners. AlphaPlus continues to receive feedback from Ontario-based literacy staff and students about the programme's impact and usefulness.

Challenges

AlphaRoute presented a range of challenges to educators and learners over the years of its development and its subsequent roll-out. This was hardly surprising given that it was, in the early years at least, a cutting-edge tool, being introduced in Canada for the first time. These are a few of the challenges the programme encountered:

The AlphaRoute learning management system was developed using a Microsoft Access database that was of limited use in terms of student tracking and depth of data. Attempts to draw down funding for a more responsive database were unsuccessful as funders instead explored the next stage of distance learning development. Educators seeking richer data regarding their learners' activity and their use of AlphaRoute were disappointed.

Most educators contracted to develop content for AlphaRoute were new to using online content development tools. Because of this, some funded content was never completed and didn't make it into AlphaRoute. Many educators and students were disappointed that AlphaRoute wasn't able to present a full curriculum of activities for all five literacy levels.

Many agencies felt pressured by the funders to include AlphaRoute delivery as part of their programming, in order to reflect a positive response to their investment. That top-down approach to implementation had a negative impact on some agencies' interest in using AlphaRoute. As a result, the promotion of AlphaRoute within Ontario was, at times, challenging.

A lack of high bandwidth and limited access to the internet had a negative impact on many literacy programmes' experience of AlphaRoute. Some of those

with low bandwidth were so frustrated by the speed at which activities loaded up that they gave up on AlphaRoute altogether.

Agency delivery of AlphaRoute required an investment of time into training and administration, which, for some, proved to be impossible to manage. In some cases, there simply wasn't enough staff or volunteer time available to initiate or sustain the engagement of staff and learners.

Over time, and notably after the proliferation of online learning activity which coincided with the launch of YouTube in 2005, AlphaRoute activities began to feel dated and static as the digital world provided more dynamic and responsive learning opportunities. The inclusion of short online courses as part of AlphaRoute between 2006 and 2008 generated a resurgence in interest but funding changes resulted in that initiative transferring to the Ontario e-Channel strategy.

SUSTAINABILITY

AlphaRoute ran for more than a decade and was the first online initiative of Ontario's Literacy and Basic Skills Programme. In May 2011, AlphaPlus discontinued the AlphaRoute programme. Users were directed to a selection of activities on a public version of AlphaRoute called AlphaRoute Access.

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<http://www.tcu.gov.on.ca/eng/training/literacy/flexible.html>

GERMANY

Ich will lernen

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COUNTRY PROFILE

Population

82,689,000

Official Language

German

Total Expenditure on Education as % of GNP

4.6

PROGRAMME OVERVIEW

Programme Title

Ich will lernen (I want to learn)

Implementing Organization

German Adult Education Association (Deutscher Volkshochschul-Verband e.V.)

Programme Partners

The Federal Ministry of Education and Research

Date of Inception

2004

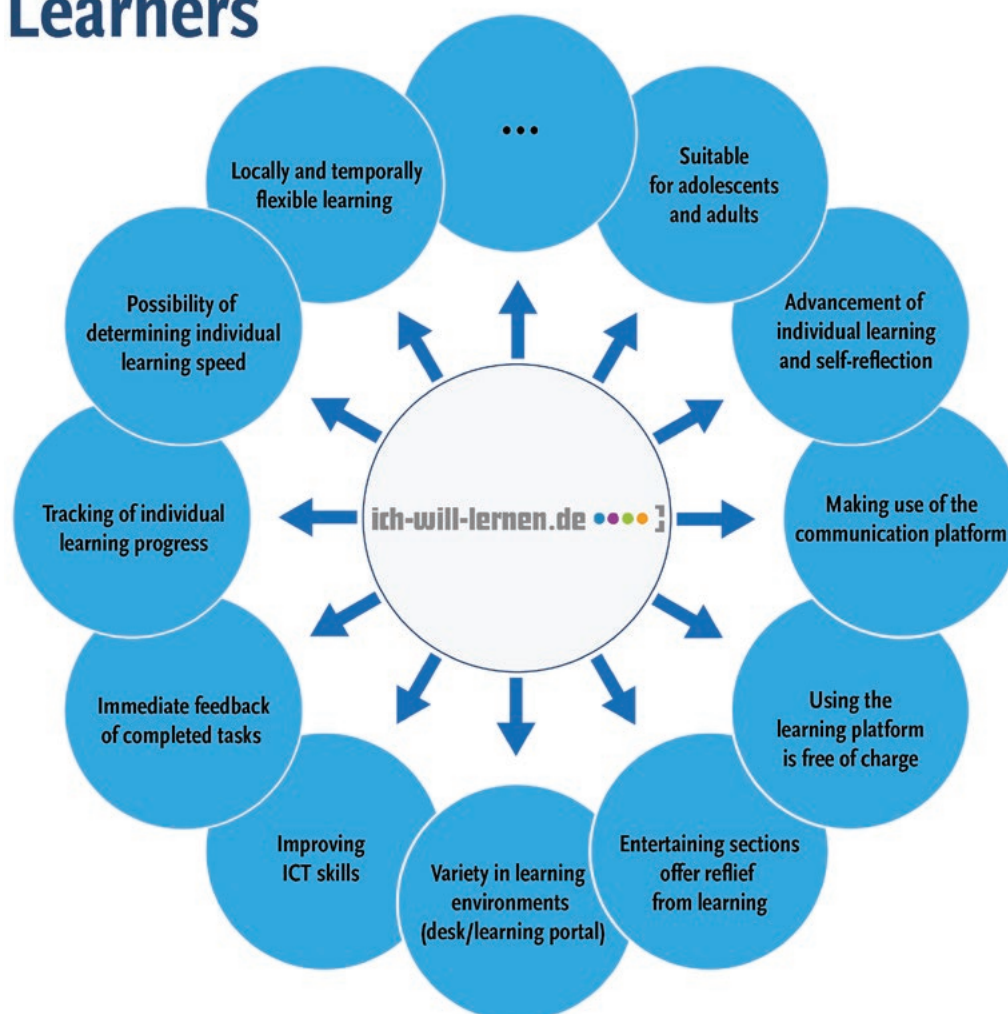
CONTEXT AND BACKGROUND

Germany has one of the most advanced educational systems in the world. The Federal Republic spends 4,6% of the GDP on education and is thus able to provide free and compulsory education to

all persons aged 18 years and below. The result of this strong support to educational development is manifested by high enrolment rates in primary, secondary and tertiary education (averaging at 95%) and high youth and adult literacy rates (99%). Yet in spite of this impressive record, 9% of students are unable to complete their schooling and as such, as of 2004, about 220.000 young people had basic education while 0,6% adults were totally illiterate, and between 6,5% and 11,2% (or four million) were functionally illiterate. In most cases, youths and adults with limited basic literacy skills find it difficult to re-enrol in the formal education system due to family commitments and the fear of being stigmatised.

Recognising the existence of these socio-economic and psychological barriers to education, the German Adult Education Association (GAEA) initiated the Ich-will-lernen (I want to learn) programme in an effort to provide functionally illiterate adults and youths an opportunity to learn how to read and write through the use of the internet. The e-learning programme is founded on the basic and practical principle that the use of the internet as a learning tool not only creates anonymity and thus dismantles the psychological barriers that prevent illiterate adults from resuming their studies but also enables them to balance their

Learners



work, family and learning commitments by learning at home at whatever time is suitable to them.

THE «ICH WILL LERNEN» PROGRAMME

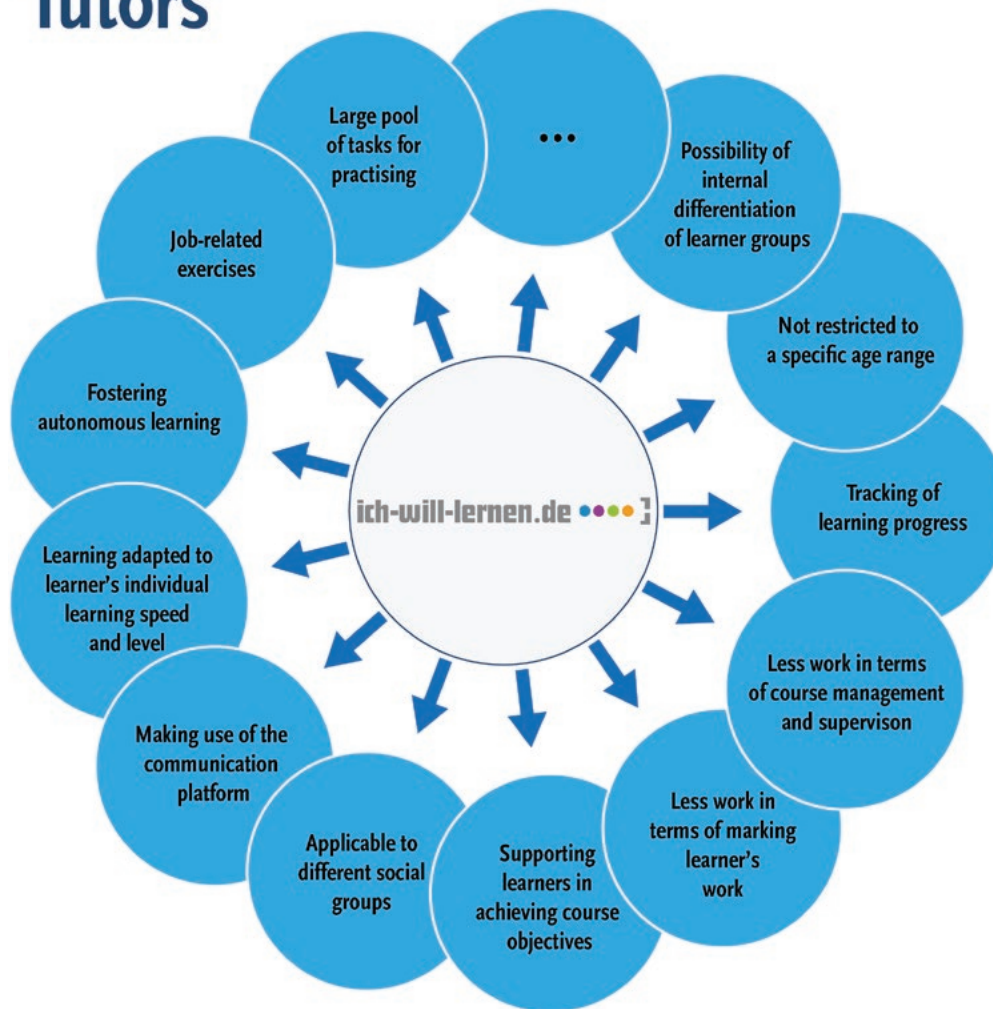
The internet portal for the Ich will lernen adult literacy programme was established in September 2004 with funding from the Federal Ministry of Education and Research. The programme provides free and distance learning opportunities to illiterate and semi-literate youths and adults who dropped out of school without acquiring a school leaving certificate. Learners are encouraged to join the programme at any given time but only after taking an internet-based self-assessment or diagnostic test to determine the starting level of their studies. Afterwards, learners are free to self-regulate and organise their learning process and progress. As such, the programme does not have a pre-determined period during which learners should complete various modules or even the entire course.

The curriculum of the programme has been continuously developed and expanded through the addition of new literacy modules and subjects of study. Currently, the programme provides basic and secondary level learning instruction in German, Mathematics and English (as a foreign language) and prepares learners for the secondary education examinations. Each of these subjects is provided at 16 different learning levels: 6 for the basic literacy course and 10 for the secondary education course. In addition to these courses and in order to stimulate interest, the programme also covers issues and subjects that are more relevant to adult learners such as labour, human relations, media, politics, nature, public administration and family relations. Plans are also under way to provide learning opportunities in basic economic education.

Aims and Objectives

- ✎ The programme endeavours to:
- ✎ Create opportunities for illiterate – and often

Tutors



marginalised – youths and adults to continue with their education through e-learning,

- 📎 Promote individual educational development by removing the socio-economic and psychological barriers to adult education,
- 📎 Empower and increase the employability of the target groups,
- 📎 Promote the development of ICT skills among youths and adults through e-learning, and
- 📎 Promote self-discipline and development of organisational skills which are central to one's success in distance education.

PROGRAMME IMPLEMENTATION: APPROACHES AND METHODOLOGIES

The programme employs two basic teaching / learning approaches: home-based and self-regulated distance learning and centred-based group learning. In the former case, learners undertake their studies anonymously supported by online-facilitators (that is, they visit and learn from the website pri-

vately) while in the latter case, learners undertake their studies at one of the around 1,000 adult education centres spread across the country. However, most learners prefer to combine the two strategies in order to maximise the learning benefits.

Regardless of the adopted learning method, learners at all levels are provided with individual learning packages containing daily practice units and interactive reading, writing and mathematical calculation exercises (each subject has about 3,000 interactive exercises). The practice units and exercises are supported by animated audio-visual materials and symbols in order to enhance the learners' understanding. In addition, learners also receive assistance from trained and qualified adult education facilitators / tutors, either online or by visiting them at the adult education centres or other educational institutions. For this reason, the project team trained about 750 trainers or facilitators in the last two years.

The portal can be used for different purposes, for example as to supplement literacy exercises with ICT skills or if learners already obtain those skills it can be useful for directly fostering other weaknesses.

There are more than 31,000 exercises available for the areas school leaving certificate, literacy and basic skills in economy. Each module is divided into different sections, for example the area of school graduation contains exercises related to German and English language skills or numeracy skills, which are oriented to the learning matter that students need to graduate from school.

The learning portal is freely accessible.

Teachers can access the portal as administrator and can for example allot exercises to the course members as homework or to allocate single exercises to separate learners with individual weaknesses.

FUNDING

The programme is funded by means of the German Ministry of Education (Bundesministerium für Bildung und Forschung).

MONITORING AND EVALUATION

In autumn 2012 the Zentrum für Evaluation und Forschungsberatung (ZEF) (Centre for Evaluation and Research Consultancy) of the University of

Klagenfurt conducted an external evaluation to determine the impact of the programme. Six adult education centres elaborated on concepts how to implement the portal as supplement to attending the classes. With the goal to offer courses with the most variety as possible eight conceptual possibilities could be tested. The assessment of the concepts was leading to the positive conclusion that the «ich will lernen» portal can successfully be implemented in adult literacy courses as well as in courses to catch up on graduating from school.

The participants' learning progress is monitored and evaluated on an ongoing basis through the use of internet based self-assessment or diagnostic tests and interactive exercises. These tests and exercises are conducted at the end of every chapter and the results are automatically evaluated and documented and help to determine the learner's progress. Learners are only allowed to advance through the curriculum when they successfully mastered one topic. Further assistance is provided to learners if they fail the said tests and exercises.

Apart from monitoring the progress of learners, the number of registered and anonymous learners is also automatically recorded on the website. To date, records indicate that about 200,000 learners have used the portal since 2004 while a further 10,000 different learners use the website monthly. Further information on the number and progress of programme participants is provided by programme facilitators and ongoing feedback from learners.

These processes of evaluation are critical in shaping the development of the programme.

The evaluation is helpful amongst others to support teachers in the usage of the portal. The results of the evaluation are prepared in a brief handout available on the website www.grundbildung.de.

Assessment of the Learner

Teachers have the opportunity to follow the learner's individual progress and to explore how many exercises were concluded with which results. Most of the tasks are corrected directly through the system so that the learner comes to know his or her results right away. This way of learning through immediate feedback is a brilliant example of learning out of experiences and moreover learning theory predicts that no delay in feedback providing will help the learner to better keep what he or she has learned because it effectively reinforces correct responses (Smith and Kimball, 2010).

IMPACT AND CHALLENGES

The users can learn anonymously and independently and the portal can be used as well as supplement to in-person classes.

The programme has had some discernible impact on the provision of educational opportunities to the public. As noted above, over 200,000 learners have benefited from the programme and about 10,000 learners use the website every month. Hence, the programme has had a positive impact on the dissemination of literacy materials as well as the provision of technical literacy skills training assistance to disadvantaged people and because of this, it has received three prestigious rewards for its work: the Comenius Medal 2005; the European E-Learning Award eureleA 2006 and the national Digita 2006.

However, funding remains a major challenge. Currently, the programme is temporarily funded by the Federal Ministry of Education and Research but in the next few years it will be necessary to find new sponsors to cover the annual costs of about 300,000 €.

LESSONS LEARNED

- ✎ E-learning is one of the most effective strategy of dismantling the socio-economic barriers that prevents adults from continuing with their education and hence, creates unlimited educational opportunities for learners,
- ✎ E-learning is economically effective and efficient

for both the learners and programme implementers. Besides the online-facilitators who work with anonymous learners more than 1.400 teachers use the programme in their courses.

- ✎ Distance education fosters self-discipline among learners,
- ✎ The provision of professional mentoring is fundamental for the success of online-based learning programmes. Similarly, the interactive exercises ought to be user friendly in order encourage learners to use the website.

SUSTAINABILITY

Since its inception in 2004, the programme has grown and continues to grow in popularity in German adult education centres. As noted above, about 200,000 learners have benefited from the programme since 2004. Currently, about 10,000 learners visit the website monthly and data collected in 2012 state that 50,000 users sign up on the portal annually. Due to this success, the German Ministry of Education and Research has expressed their interest to implement the programme in the formal school system. Furthermore, more and more prisons use the portal to promote and support the rehabilitation and re-socialization of prisoners. Hence, given both the public interest in and State support, the programme has great potential for long-term sustainability. Nonetheless, improvements are also needed to make the programme more attractive to learners.

SOURCES

- ✎ <http://www.zweite-chance-online.de>
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- ✎ Smith, T; Kimball, D. (2010) Learning from feedback: Spacing and the delay–retention effect. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, Vol 36(1), pp. 80-95.

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<http://www.dvv-vhs.de>

WriteOn



Log out

Nala Skills Finder

Answer the questions below to see a picture of your skills.
If you skip any sections, you will not see results for that section.

	Yes	No
Communications		
I can read short pieces of text including timetables, bills, menus and road signs.	<input checked="" type="radio"/>	<input type="radio"/>
I can read and comment on newspaper articles and books.	<input checked="" type="radio"/>	<input type="radio"/>
I can write 5 sentences on a single topic.	<input type="radio"/>	<input checked="" type="radio"/>
I can write for a range of formal situations.	<input checked="" type="radio"/>	<input type="radio"/>
I can use a phone to leave a message, find out information, and ask for directions.	<input checked="" type="radio"/>	<input type="radio"/>
I can give a talk or presentation to a group or team.	<input checked="" type="radio"/>	<input type="radio"/>
Maths		
I can work out sums with figures up to 100.	<input checked="" type="radio"/>	<input type="radio"/>
I can calculate my weekly budget and work out what proportion is spent on bills.	<input checked="" type="radio"/>	<input type="radio"/>
I can recognise patterns in shapes, numbers and sounds.	<input checked="" type="radio"/>	<input type="radio"/>
I understand the difference between 2D and 3D objects and the difference between area and volume.	<input type="radio"/>	<input checked="" type="radio"/>
I can calculate the volume and area and make a scale drawing of the room I'm in.	<input type="radio"/>	<input checked="" type="radio"/>
I can understand graphs and charts in opinion polls.	<input checked="" type="radio"/>	<input type="radio"/>
I can represent my weekly budget as a pie or bar chart.	<input type="radio"/>	<input checked="" type="radio"/>

COUNTRY PROFILE

Population

4.37 million

Official Languages

English and Irish

Total Expenditure on Education as % of GNP

4.7% (2005)

Access to Primary Education – Total Net Intake Rate (NIR)

Men: 98.8%, Women: 98.9%

Total Youth Literacy Rate (15-24 years)

99.8% (2007)

Statistical Sources

http://www.childinfo.org/files/IND_Ireland.pdf,
UNESCO: EFA Global Monitoring Report, World Bank: World Development Indicators

PROGRAMME OVERVIEW

Programme Title

WriteOn

Implementing Organization

National Adult Literacy Agency (NALA)

Annual Programme Costs

With an average 600 learners per year, and approximately 2,000 hours of telephone tutoring, WriteOn costs in the region of €100,000 (138,000 USD) per year including all staff and tutoring costs, plus just over €11,000 (15,000 USD) for the hosting and maintenance of the web service.

Date of Inception

September 2008

BACKGROUND AND CONTEXT

1997 was a damning year of reckoning for adult literacy in Ireland. The OECD's International Adult Literacy Survey found that one on four adults did not have the literacy skills necessary to effectively take part in Irish society, whilst Ireland's International Adult Literacy Survey (IALS) also found that 25 per cent of adults have problems with basic Level 1 literacy tasks, and 18.5 per cent of the labour force had not achieved Level 2 qualifications, equivalent to

basic primary school leaver's qualifications. Despite excellent rates of primary school enrolment, the IALS report found that these deficiencies in adult literacy came from a combination of poor primary education - one in ten children leaving primary school with literacy difficulties, and three in ten in disadvantaged areas – and minimal support for adult literacy development, which was allocated just 0.3 per cent of the total education budget.

Public funding for adult learning in Ireland has since risen from €1m (1.4m USD) in 1997 to €30m (41m USD) in 2012, and the number of available adult literacy learning places has increased from 5,000 to 57,000. Whilst this represents a significant improvement, the National Adult Literacy Agency (NALA) says that support is still only provided to 11 per cent of the people in need. The recently released results of the OECD Survey of adult skills (PIAAC) indicates that 4.3% of the Irish adults are still at a below level 1 proficiency in literacy and 13.2% are only at level 1 (OECD, 2013). It is not easy to reach out to adults affected by low literacy skills. This is partly because people often feel too embarrassed to return to learning and go to great extremes to hide their difficulties from their friends and family. Similarly, some people have had a negative experience of school in the past and associate returning to learning with that experience.

Founded in 1980, NALA's mission is to meet the needs of the remaining 89 per cent who continue to lack access to adult literacy learning, through distance learning, and especially through its primary distance learning initiative, WriteOn.

WRITEON PROGRAMME

WriteOn (<http://www.writeon.ie>) was launched by NALA in September 2008 to provide free online learning across the country, to facilitate literacy development and accreditation for adult learners at Levels 2 and 3 of the National Framework of Qualifications of Ireland. The website was developed by Avallain, a Swiss company who had previously built the similar German website, *ich-will-lernen.de*. NALA procured a team of authors to produce the content for the site which took approximately 5 months to develop.

The programme follows the lessons learnt from NALA's previous distance learning services, namely *literacytools.ie* (2004) and *rug.ie* (2007), and now provides online learning for 32,000 users across the country.

WriteOn provides two primary services to enable learners to achieve Levels 2 and 3 accreditation.

Firstly, a Recognition of Prior Learning (RPL) tool that uses online assessments allows learners to obtain qualifications for what they have previously learnt but never received formal accreditation for; this innovative facility is the only method of RPL available in Ireland. Secondly, for those who do not qualify for certification through RPL, WriteOn offers a comprehensive suite of online learning materials, complemented by one-on-one tutor availability, for users to improve their skills and work towards accredited qualifications.

Although the programme is specifically designed for individuals working through online learning materials in their own time, the WriteOn programme also lends itself to blended learning approaches in physical «bricks-and-mortar» learning institutes, and is currently being used by 180 learning centres across the country.

Currently, learners may work towards the award certificates listed below in Table 1. As the table shows, the programme includes a wide range of everyday subjects that cover literacy, functional skills and life skills.

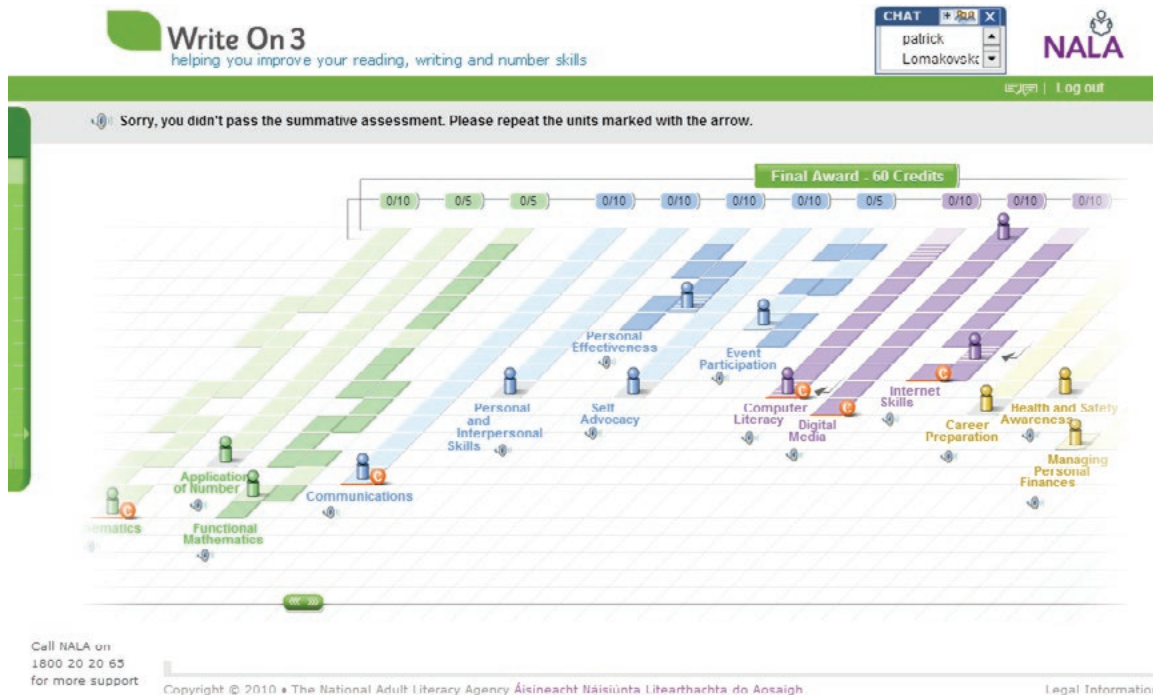
Aims and Objectives

- ✎ WriteOn aims to provide high quality and free distance learning to improve literacy for all, through mitigation of the following barriers:
- ✎ WriteOn aims to mitigate potential stigma associated with a lack of basic adult education by providing a private and confidential learning environment.
- ✎ The programme aims to mitigate the burden on those without childcare facilities or without means of transport, by providing a facility for learning at home and at any time.
- ✎ The free service aims to encourage participation from lower income groups who may otherwise be excluded from similar adult qualification programmes.
- ✎ WriteOn intends to meet the needs of the 89 per cent «gap» by increasing participation in its programme, through increased user numbers, more locations, more learner profiles, and more qualifications.

PROGRAMME IMPLEMENTATION: APPROACHES AND METHODOLOGIES

Organisational Structure

WriteOn is a programme of the NALA Distance Learning Service and benefits from access to NALA's experience and expertise. Specifically, the operation



of the WriteOn programme depends on the following team members:

- ✎ Distance Learning Co-ordinator, who oversees WriteOn as part of NALA's Distance Learning Service
- ✎ Distance Learning Administration team (1 full time and 2 part time staff) who handle queries from centres and learners and manage quality assurance procedures and documentation
- ✎ Internal Verifier (only works on content as each round of accreditation approaches, typically 5 days per round)
- ✎ Online Assessors, who also function as Distance Learning Tutors for the wider Distance Learning Service.

Recruitment and Training of Facilitators

To complement the online learning materials, learners have access to one-on-one tutor sessions via telephone. Learners may call a Freephone number and arrange for a tutor to call them back at a time of their convenience, free of charge. The WriteOn tutors are qualified and experienced adult literacy instructors. These tutors are hired on a part time basis and paid an equivalent wage of €40 (55 USD) per hour of learner contact time. The number of tutors recruited is flexible and dependant on demand; the actual number of employed tutors has fluctuated between 11 and 29 in recent years.

Training is provided to tutors in regards to the specific requirements of the WriteOn programme, but no formal training in literacy instruction is given. Rather NALA hires ready qualified professionals.

Mobilisation of Participants

Since the inception of WriteOn in 2008, NALA has broadcast 13 educational television series during prime-time viewing hours, with a total of 61 hours of television content. This has proved to be an effective means of mobilising an audience, who are then invited to interact with the WriteOn programme through the internet, Freephone or Freetext. NALA operates a year round Freephone support line and receives approximately 10,000 calls per annum from adults enquiring about how they can improve their literacy skills.

Users are then forwarded to create an online learner account, and then proceed to the Skills Checker service which determines the learner profile and presents the learner with a range of options for the awards that they may work towards. The Skills Checker asks 35 questions which cover all of the 26 awards available on WriteOn. Learners are asked reflective questions, to which they answer Yes or No. This then presents a visual graph of a learner's 'spiky profile' with recommendations for study. Learners can return to the Skills Checker at any time and change their answers if they feel their skills have

Nala Skills Finder

Answer the questions below to see a picture of your skills.
 If you skip any sections, you will not see results for that section.

	Yes	No
Communications		
I can read short pieces of text including timetables, bills, menus and road signs.	<input checked="" type="radio"/>	<input type="radio"/>
I can read and comment on newspaper articles and books.	<input type="radio"/>	<input checked="" type="radio"/>
I can write 5 sentences on a single topic.	<input type="radio"/>	<input checked="" type="radio"/>
I can write for a range of formal situations.	<input checked="" type="radio"/>	<input type="radio"/>
I can use a phone to leave a message, find out information, and ask for directions.	<input checked="" type="radio"/>	<input type="radio"/>
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I can calculate the volume and area and make a scale drawing of the room I'm in.	<input type="radio"/>	<input checked="" type="radio"/>
I can understand graphs and charts in opinion polls.	<input checked="" type="radio"/>	<input type="radio"/>
I can represent my weekly budget as a pie or bar chart.	<input type="radio"/>	<input checked="" type="radio"/>

changed. In this way, learners can see a visual picture of skills and competence improvement.

TRAINING-LEARNING METHODS AND APPROACHES

The primary concept of WriteOn is that learners work independently online at home, at times and in conditions that suit them, with the optional support of tutors available on Freephone.

Learning content is based on the specific learning outcomes which are set out in the 26 national awards which learners are able to work towards. A learners online lesson plan shows a roadmap of learning outcomes that contribute to the final reward. The user may click on any learning area to proceed with assessment questions and move along the ladder towards level completion.

The courses are delivered in the form of online exercises and 16 online work books that take learners through real-world examples to apply the skills being learnt. The primary themes through which the content is taught are family, health, sport & leisure, work, money and technology.

Learners are introduced to the mind mapping learning technique through practical examples, including the household and factors to consider when buying a car. This double page includes a mixture of learn-

ing methods including graphical explanation and exercises, whilst video demonstrations for various elements are also available in the resource centre online. Figure 4 shows how the workbook appears in an interactive online environment, where the user has the option to interact with the material in a number of ways and search for specific topics or learning outcomes. The programme is in this way entirely flexible; learners are not required to follow a set programme but instead may pursue subjects and themes of their interest and needs in order to work towards the skills that they want to develop.

In addition to use by independent learners, 180 learning centres, including schools and adult learning institutions in Ireland are using WriteOn in a blended working environment, typically by assigning learners taught in classroom environments with tasks to complete at home in order to solidify their understanding. In this respect WriteOn has not only provided a service for independent learners but has also improved the tools available to those who have managed to access traditional or more formal forms of learning.

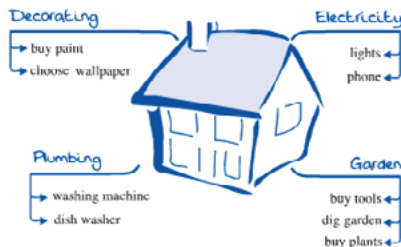
Teaching outcomes

WriteOn learners have the option to obtain or work towards accredited level 2 and 3 qualifications through the national governing body Quality and Qualifications Ireland (QQI). Figure 5 shows the steps

Learning and Planning

Before we start to do anything new, it is useful to have a plan. One of the most useful things to help us to plan is a mind map. A mind map is a diagram that helps you to put your ideas on paper using pictures and words rather than lots of writing.

Look at the following example of a mind map.
It was drawn to show some of the things that need to be planned when moving into a new house.



How to make a mind map.

- Use a large sheet of paper and turn it on its side.
- Start from the centre of the page with a clear image.
- Use drawings instead of words if it helps.
- Use different colour pens or pencils.
- Draw a main line and then smaller lines branching off it to connect similar things.
- Anything that stands out on the page will stand out in your mind.
- Print the words. It makes it easier to read.
- Put your ideas down as you think of them. You can add things later if you need to.
- Write the words along the lines.
- Have fun!

Learning and Planning

Imagine you are learning to drive and buying a car for the first time.

Look at the following list of some of the things you need to think about and draw a mind map to include them all.

Buying a car

Cost	Choosing a car	Learning to drive
Getting a loan	Make of car	Eye test
Insurance	Size	Licence
Petrol	New or second hand	Lessons
Parking	Colour	Rules of the road

Figure 3

Some notes:

- Begin by drawing a car in the centre of a clean blank sheet of paper. You do not have to be good at drawing. Remember it is your mind map and only you have to see it and understand it.
- Draw three thick lines in different colours for the headings: cost, choosing a car and learning to drive.
- Draw thinner lines from the coloured lines for each of the things that belong in that group.
- Use as many pictures as possible. For example, you could draw an eye to remind you that you need to take an eye test.

TIP You can use mind maps to take notes at meetings, for solving problems, for writing stories or for going over things you have learned.

to award achievement. As the graphic shows, the RPL tool allows the learner to move straight from stage 3 to stage 5 in order to achieve certification for skills that they already possess.

PROGRAMME IMPACT AND CHALLENGES

Monitoring and Evaluation

In order to verify that the programme meets NALA's Quality Assurance Assessment Policy and Procedures, the WriteOn programme is annually subjected to three rounds of internal and external review. This ensures that the range of assessment techniques and instruments are as per the QQI requirements for each programme.

In addition, annual monitoring visits are conducted by QQI, and independent evaluations of the programme and the overall Distance Learning Service are commissioned on a regular basis, in order to measure the programme impact and improve the service provided. Learners are actively involved in external evaluations through surveys and interviews.

IMPACTS

Since its inception, over 32,000 learners have created accounts with WriteOn, with over 2,500 learners going on to obtain 14,500 national certificates at levels 2 and 3.

Furthermore, more than 180 learning centres around the country, as well as 31 out of 33 national vocational education committees use the WriteOn programme for blended teaching methods and accreditation. WriteOn has therefore reached nationwide recognition and has been adopted by many users as a stand-alone educational tool or to complement other existing programmes and courses.

Innovative features

The WriteOn programme is innovative in its highly personalised approach that allows learners to study what they need and want to, at any time to suit their lifestyles. This personal approach combines an individual responsibility for self-development with personal tutor support and relevant learning materials, which are delivered through a range of day-to-day mediums, including television, telephone, internet and paper-based learning materials.

WriteOn also claims to be the only online programme of its kind in the world to offer learners a means of certification through Recognition of Prior Learning, and reports that several other countries, including Turkey and New Zealand, have contacted WriteOn with a wish to replicate the service, although no such services have yet been launched.

CHALLENGES

WriteOn's popularity has led to its widespread use across organisations for which its programmes and features were not originally designed. The initial implementation was designed largely for individual learners and did not anticipate the volume of demand in blended learning contexts. Moreover, the programme is beginning to attract a broader group of users, and is now not only used by literacy groups but also by disability organisations, probation services, and job clubs. This has meant that NALA has had to provide more tutors and training in tuition and accreditation than it anticipated. However, with help from its regular external assessments, the programme has responded and adapted to these needs and increased demands.

SUSTAINABILITY

The automated programme administration, especially with regards to accreditation through Recognition of Prior Learning, minimises the need for human administrative support and helps to keep the programme sustainable in spite of the unanticipated demand. Furthermore, the programme is designed in a way so that the learning processes and materials are easily adapted or added to should the demand arise, as is clear in the programmes adaptation to more easily integrate blended learning in formal education centres.

The programme has a sustainable source of funding from the Government Department of Education and Skills.

LESSONS LEARNT

Through experiences with blended learning methods, combining WriteOn with traditional learning techniques, the NALA evaluation (2011) reports that:

- ✎ centres found that basic literacy learners were very interested in using ICT to improve their literacy skills;
- ✎ learners ICT skills were able to improve significantly in tandem with improvements in literacy skills;
- ✎ the use of the online programme to accompany traditional methods provided an effective means of extending learning time and encouraging independent study;
- ✎ the approach with WriteOn allowed tutors using blended methods to more effectively address individual learning needs.

The 2011 Connected! evaluation of the WriteOn programme finds that:

- ✎ WriteOn provides an attractive route back to learning for previously reluctant learners;
- ✎ WriteOn reduces the stigmatised image that is attached to the early stages of literacy learning;
- ✎ use of computers for the WriteOn programme provided a sense of accomplishment for many learners that deviates from the negative associations of pen-and-paper with -previous educational experiences;
- ✎ the integration of literacy skills with computer use and real world examples provides learners with experience and skills that can be used in practical applications and may improve their employability;
- ✎ learners have become more autonomous and taken increased responsibility for their own learning, which has shown to yield improved learning outcomes;
- ✎ the service could be improved by adding a section for tutor training and instruction materials that could also be used by families or self-tutored small groups.

SOURCES

- ✎ <http://www.nala.ie/resources/international-adult-literacy-survey-results-ireland>
- ✎ <http://www.nala.ie/resources/blended-learning-report-2011>
- ✎ <http://www.nala.ie/resources/nala-dls-evaluation-connected-improving-literacy-and-computer-skills-through-online>
- ✎ <http://www.nala.ie/resources/nala-distance-learning-service-evaluation-2012>
- ✎ <http://www.nala.ie/resources/wwwwriteonline-usability-testing-report-nala>
- ✎ OECD (2013) OECD Skills Outlook 2013. First results from the survey of adult skills, OECD Publishing, <http://dx.doi.org/10.1787/9789264204256-en>

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TURKEY

Web-based Literacy Programme

COUNTRY PROFILE

Population

73,640,000 (2011)

Poverty (Population living on less than 2 USD per day)

5% (2010)

Official language

Turkish

Other spoken languages

Kurmanji, Zaza, Arabic, Laz

Total youth literacy rate (15–24 years, 2011)

Total: 98.6%, Male: 99.4%, Female: 97.9%

Adult literacy rate (15 years and over, 2011)

Total: 94.1%, Male: 97.9%, Female: 90.3%

Statistical sources

UNICEF, World Bank: World Development Indicators database, UNESCO Institute for Statistics

PROGRAMME OVERVIEW

Programme Title

Web-Based Literacy Programme (WBLP).

Implementing Organization

Anne Çocuk Eğitim Vakfı (AÇEV, Mother-Child Education Foundation)

Language of Instruction

Turkish

Funding

For project development: JM Morgan Chase Foundation, Ashmore Foundation, Empower Foundation. The programme is currently self-financing.

Annual Programme Costs

60,000 TRY (approx.)

Date of Inception

2011

COUNTRY CONTEXT AND BACKGROUND

In the last decade, Turkey has experienced a marked rise in the use of technology in everyday life. With an estimated 30 million users, the country is presently ranked sixth in the world for overall Facebook subscription. The Turkish government is also increasingly adopting Information Communication Technologies (ICTs) as a means to interact with the general popu-

lation and facilitate administrative processes, using an «e-government» system. In 2008 this system was used for 22 bureaucratic procedures such as obtaining social security paperwork; by 2011 this number had increased to 292. Turkey's ascent into the information communication age has meant that adults now increasingly require computer skills as well as basic literacy proficiencies. Under the current centralised healthcare system, for instance, hospital and doctor's appointments can only be made online.

However, according to the Turkish Statistical Institute there are 2.8 million adults who cannot read and write in Turkey (2012), 80% being women. In addition, 3.8 million adults have not completed primary school. These individuals often have difficulty taking part in routine daily activities or meeting their basic social needs. Turkey has made great efforts towards improving access to education. In 1997, the Turkish government introduced an eight-year compulsory education system, and it extended compulsory education to twelve years in March 2012. The net enrolment ratio for primary school participation as of 2011 was 98% for males and 97% for females. Nevertheless, high levels of school absence in formal education are an issue. According to a recent Situation Analysis and Need Assessment report published by the Turkish Ministry of Education, the average annual absence of students is 73 days. Facilities and structures to encourage school drop-outs to return to school and get an education are also lacking.

In order to tackle these problems, and in response to Turkey's technological shift, the Mother Child Education Foundation (AÇEV) developed the «Web Based Literacy Programme» (WBLP) in 2011 to reach adults seeking to improve their literacy and numeracy skills. WBLP mainly targets adults who have had no access to learning opportunities but have the will to learn. WBLP operates mainly through a learning portal (<http://www.acevdeokuyaz.org>) where users can login from anywhere and at any time provided they have access to a computer and an internet connection. The learning portal contains 5,500 exercises geared to impart basic numeracy and literacy skills including reading, writing, and comprehension.



Using distance learning as a learning form supports the implementation of AÇEV's main principle of «equal opportunities for all».

OVERVIEW

AÇEV's Web-Based Literacy Programme was designed around a distance-learning model with the aim to make literacy education accessible to individuals through an internet portal. The portal's purpose is to support young people and adults who are just beginning to learn to read and write, who want to refresh their skills, and who are preparing for literacy-qualification exams. In Turkey there are currently 970 Adult Education Centers (AECs), which are municipal institutions providing first level and second level literacy courses throughout the country. In order to return to open schooling, adults need to pass two levels of literacy courses or exams. Open schooling is an alternative learning system for people outside the age of compulsory education (those aged 15 years and older). Using the WBLP learning

portal, adults can acquire the knowledge and skills that they need to pass the first and second level literacy exams in AECs.

The learning portal is currently the only free adult learning online platform in Turkey. As the most comprehensive adult literacy programme of AÇEV, the WBLP contains the entire content of AÇEV's existing face-to-face adult literacy programmes: the Functional Adult Literacy Program (FALP), and the Advanced Literacy-Access to Information Program (ALAIP). After participants in these classes had shown a willingness to learn how to use the internet and computers, AÇEV carried out a study of 196 learners to better understand their technological requirements. Though 83% of learners reported using cell phones and 58% had a computer at home, only 10.5% knew how to use a computer or access web resources. After an overwhelming majority (96%) stated of their desire to develop computer skills, AÇEV decided to create the WBLP as an online version and extension of its existing curriculum.



One of the features of the portal design is that it allows students to keep track of their own progress independently. The website content and exercises are clearly structured and user-friendly, which ensures they can be easily navigated by those with very limited literacy and computer skills. An important feature of the portal is its text-to-speech function, which allows users to hear both what they read and what they write.

Aims and Objectives

The main objectives of the programme are to:

- ☞ promote literacy, numeracy and cognitive skills among youths and adults through e-learning
- ☞ provide an alternative to conventional practices for illiterate youth and adults, and those with very basic literacy skills, who want to continue their education
- ☞ provide literacy learners with flexible tools which respond to their individual needs and goals

- ☞ promote the development of ICT skills among young people and adults through e-learning

PROGRAMME IMPLEMENTATION

Using a platform developed by the Swiss company, Avallain, the WBLP was designed by a Professor in the Department of Psychology at the University of Minnesota Duluth and an educational scientist and social psychologist. A team of specialists – consisting of an adult educator, psychological counselor, primary school teacher, literary specialist and programme developer – collaborated to develop the learning content of the WBLP.

The online curriculum consists of two main modules:

- ☞ Basic Literacy and Math, consisting of four learning areas:
 - ☞ Foundations of Literacy,
 - ☞ Comprehension (oral, written, digital)
 - ☞ Expression (oral, written, digital)



- ✎ Math
- ✎ School Preparation, also consisting of four learning areas:
 - ✎ Language Arts
 - ✎ Math
 - ✎ Social Studies
 - ✎ Science and Technology

The majority of the exercises within the Basic Literacy and Math module are based upon the existing content of AÇEVs FALP and ALAIP programmes. The contents of both of the main modules are updated regularly, at the end of each term. Each year is divided into 2 terms.

The Basic Literacy and Math module is further broken down into Foundations of Literacy, Comprehension (oral, written, digital) Expression (oral, written, digital) and Math sections, while the School Preparation module contains Language Arts, Science & Technology, and Social Studies units. In total the Basic Literacy and Math module is structured in seven hierarchical levels (Foundations of Literacy has four, while Comprehension and Expression each have three levels). In total, thirty-four different types of exercise are made available via the portal.

The WBLP also contains innovative content not yet featured in AÇEV's existing face-to-face learning programmes. The Comprehension and Expression components of the Basic Literacy and Math module, as well as the School Preparation module, for instance, are completely new developments. AÇEV created the content of these new developments according to WBLP's standard content framework.

The learning portal consists of 5,500 screens with up to 360 hours of instruction. Learners take several online placement tests upon their subscription to the portal, enabling them to begin learning at a level which reflects their existing proficiencies. In order to finish all levels in the portal, a learner needs to work for 360 hours. To date, 83 learners could finish all the levels in the portal (starting to learn from the first or second level of the literacy module).

The curriculum of WBLP is based upon the knowledge, skills and competencies typically acquired in elementary school (the first four years of compulsory education). A learner who finishes all the levels is expected to be successful in the primary education examination for open secondary school. Taken in Adult Education Centres, the exam is called the

«Second-Level Adult Literacy Programme Exam». It tests learners' knowledge and skills in 4 subjects: Language Arts, Math, Science & Technology and Social Science. Practicing the School Preparation module – the most advanced of the learning portal – gives learners the competencies and confidence to take this test. Those who pass are then able to progress to open secondary school.

In addition to acquiring basic literacy skills, learners who have used the learning portal are expected to improve their higher-order cognitive skills and their skills in communication and digital literacy.

Enrolment of Learners

WBLP has been developed mainly for adults and young people who cannot attend classes on a regular basis due to various reasons, such as work, family obligations, distance and disability. Users of the portal who do not or cannot attend any face-to-face classes are known as anonymous learners, as they are not known personally to classroom tutors. They are supported by a special group of online tutors who cater only for their needs. The anonymous learners account for three-quarters of the portal's total users.

The learning portal is also being used by the participants of AÇEV's face-to-face literacy programmes, who account for the remaining quarter of the total users. In AÇEV's face-to-face literacy programmes, the learning portal is used in two ways: both as a complementary tool to regular face-to-face literacy programmes, and as an integrated part of the curriculum in «technology supported literacy courses». In the regular face-to-face literacy courses, the participants are introduced to the learning portal by their tutors and encouraged to use it during classes and after their course time if they have internet access at home.

In locations where the participants have access to computers and internet, the courses are conducted as «technology supported literacy courses». In this course modality, the web-based resource is being used as an integrated part of the existing curriculum, instead of a support system. These courses last for thirteen weeks, and consist of six hours of face-to-face classroom work and three hours of activities on the learning portal each week.

Recruitment and Training of Facilitators

Within the portal there are two groups of online tutors. The first group consists of adult literacy tutors who already teach AÇEV's face-to-face liter-

acy courses. These tutors are only responsible for the students they teach in the classroom who use the web portal. The second group of tutors is responsible for the online users. They are mostly experienced adult literacy tutors who are not able to conduct a literacy class anymore for various reasons, but who want to continue to volunteer. The first group of tutors receives a one-day training course and the second group receives a two-day training course. Both trainings are provided by a «master trainer» team set up by AÇEV, which consists of experienced online tutors who already serve learners on the web-portal.

Programme Support Structures

The tutors regularly check on the learners' progress and support them in overcoming technical or content-oriented problems. Among the tasks of the online tutors is to assist users in becoming more responsible for their own learning and raising their self-esteem, which helps to increase their level of autonomous learning. There are currently 116 online tutors and they are always available to assist learners with corrections and explanations. Upon their employment, online tutors sign an agreement which states that they must check their messages in the learning portal on a daily basis, and respond within two days when they receive any questions from their learners. Each online tutor is responsible for 300 general users. Another tool available to users is the online forum (shown below). Using this medium, learners and tutors form a community, helping and encouraging one another:

Assessment of Learning Achievements

The learners' progress is monitored automatically through the system. Using a learning map facility (pictured below), learners are able to keep track of their progress independently. They have a path which displays where they are and how much work remains to be done. Learners are only allowed to advance through the curriculum when they have successfully completed the respective learning units.

MONITORING AND EVALUATION

The learning portal has a system which assigns each user an online tutor during the registration process. The frequency, length of use and performance of the users are all monitored on a weekly basis by the online tutors and administrators of the system. Tutors are therefore able to see if a learner is struggling with a lack of knowledge or needs to improve certain skills, at which point he or she can intervene to provide support. Tutors can assign homework,



for example, to learners in areas requiring further practice.

PROGRAMME IMPACT AND CHALLENGES

Impact and achievements

The learning portal had 6800 registered users as of November 2013. The majority of the users are female. Male users account for only a quarter of total use, demonstrating the suitability of AÇEV's programme in tackling the high level of gender disparity for literacy levels in Turkey. 56% of the users are between 15 and 44 years old. 19% of the total learners are aged between 15 and 24 years old, and the rest are aged 45 years or older. 52% of the programme users have never gone to school, indicating AÇEV's success in reaching people outside of formal education.

The impact of WBLP on regular users of the learning portal was also measured by a pilot study in 2012. In the study, a technology supported group had a third of their adult literacy classes replaced with web-based activities, while a control group had classes as usual without using the learning portal. Both groups received pre- and post-tests of Math, Word Recognition, Spelling and Comprehension. The results showed that the technology supported group performed equally as well as the control group. This indicated that learners could maintain their literacy and numeracy proficiencies whilst also developing their digital competencies – without a drop in performance.

In total, 10% percent of anonymous learners use the portal for at least one month and sign in to the portal at least twenty times a month. This continuous use has had noticeable effects: of this group of frequent users, 82% typically move up at least one level in the system. Additionally, 19% of the total users have made progress in the system by moving up two levels, 19% have moved up three levels and 11% have moved up four or more levels. AÇEV are currently developing a tool for the learning portal which will collate the various reports of user performance and allow for an internal analysis of the results.

That many of the portal's users have taken the Second Level Adult Literacy Program Exam to enroll in open secondary school is also regarded as an indicator of success of the programme. AÇEV are working on the creation of a follow up mechanism to track the future development of WBLP participants.

Challenges

The biggest challenge was, and still is, to create conditions for the widespread use of the learning portal. Negotiations with the General Directorate of Lifelong Learning of the Ministry of National Education (MoNE) are still ongoing in order to promote a nationwide use of the learning portal. In the meantime, and to achieve a more extensive use of the learning portal country-wide, new partners and channels of advocacy have to be found. There is currently no certification provided for participation in the WBLP. The existing national legal framework surrounding adult literacy education has no pro-



vision for the regulation of an online certification system. This issue is being negotiated with General Directorate of Lifelong Learning of the MoNE, but there is unfortunately no progress as of November 2013.

LESSONS LEARNED

- ✎ E-learning is one of the most cost-effective ways of democratizing education and giving access to lifelong learning
- ✎ E-learning platforms are able to support each and every learner efficiently, flexibly and individually
- ✎ Self-discipline, self-organization and goal setting are essential skills for efficient use of e-learning platforms
- ✎ Provision of tutoring is fundamental for the success of web-based learning programmes
- ✎ Regular interaction (learner-learner and learner-tutor) benefits learners and leads to increased motivation in learning
- ✎ Results show that when the learning portal is used frequently, learners improve their literacy and numeracy skills even in an autonomous learning environment

SUSTAINABILITY

At present AÇEV is looking for the financial support to further develop and maintain the existing programme. Even if this cannot be sourced in the short-term, AÇEV is committed to providing the WBLP as one of its main learning initiatives, and the technology supported literacy courses will be adopted in all

provinces where AÇEV's adult literacy programmes take place.

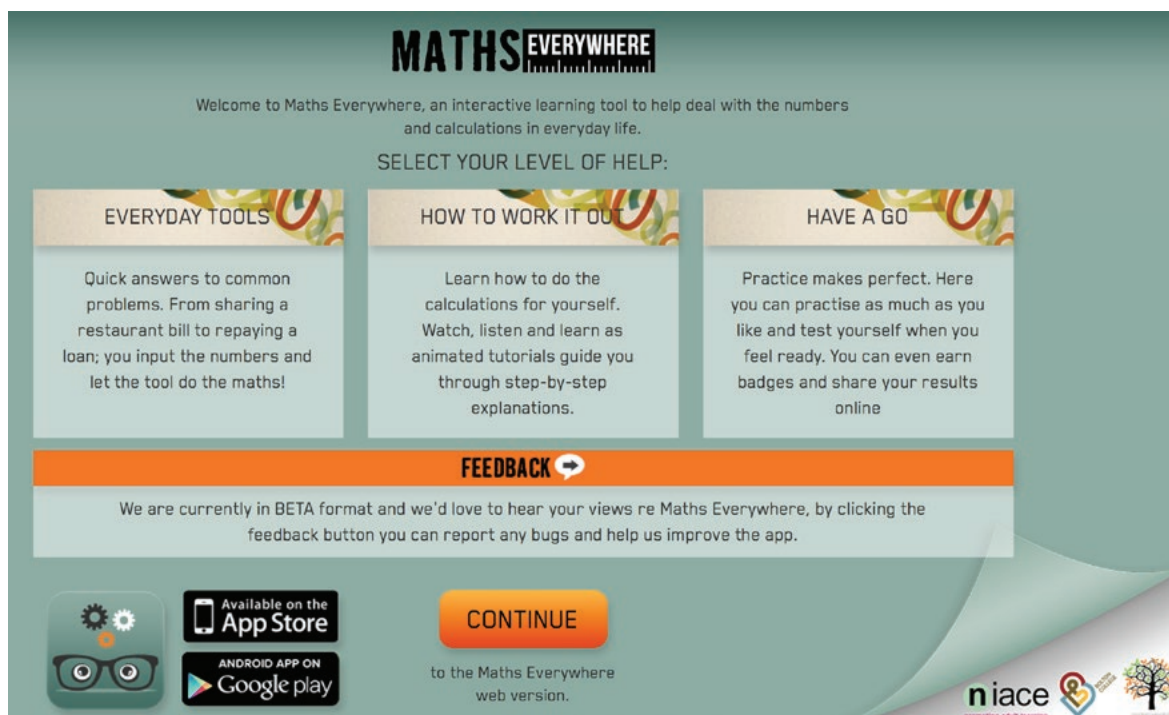
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Maths Everywhere



COUNTRY PROFILE

Population

64,097,085 (2013, World Bank)

Official language

English

PROGRAMME KEY INFORMATION

Programme title

Maths Everywhere

Implementing organization

NIACE

Language of instruction

English

Programme partners

Bolton College and Modern-English

Date of inception

December 2013

Funding

Department for Business, Innovation and Skills, UK government

Annual programme costs

£120,000 (equivalent to USD 202,392)

Annual programme cost per learner (based on ongoing costs for 2,500 self-directed learners)

£4.80 (roughly equivalent to USD 8). The cost will be higher if the app is used in blended learning, dependent on resource input from individual organizations.

COUNTRY CONTEXT AND BACKGROUND

Although the United Kingdom remains one of the world's wealthiest nations, many of its adults have been failed by the country's education system. Half of all adults in the UK have the literacy and numeracy skills expected of an 11 years old (NIACE, 2013). Despite this, the number of adults in the UK engaging in continuing education has fallen, from 20.1% in 2009 to 15.8% in 2011 (Department for Business, Innovation and Skills, 2011). It is estimated that 5.1 million adults in the UK are affected by low literacy skill levels, while 16.8 million adults lack basic numeracy skills (ibid.). Poor literacy and numeracy

skills not only reduce adults' capacity to cope with day-to-day challenges, such as reading medical instructions or calculating electricity bills, but can also prevent them from participating effectively in civil society. To address these concerns, the UK government and the devolved administration in Wales have made community learning centres the focus of their efforts to support 80% of all working-age adults to reach at least literacy level 1 by the end of 2016 (UIL, 2013). Literacy programmes tend to outnumber numeracy programmes in the UK. However, there is a growing appreciation of the need for more and better numeracy programmes to help adults deal with everyday number problems.

The OECD's Survey of Adult Skills (PIAAC) defines numeracy as the ability to use, apply, interpret and communicate numerical information and ideas in order to manage the mathematical demands of adult life (OECD Skills Outlook, 2013). A numerate adult is one who can respond adequately to the wide range of mathematical information encountered in everyday life. With a GDP of USD 2.476 trillion, the UK's adults might be expected to perform well in terms of numeracy. However, the OECD scores the UK only 259 out of 400 in terms of adult numeracy, significantly below the average score of 266 (ibid.). It is evident that the UK needs adult numeracy programmes in order to catch up with other OECD countries.

As technologies advance, adults need not only literacy and numeracy skills but also the ability to acquire and disseminate information in a technology-rich environment if they are to flourish as citizens. The growth in use of devices such as mobile phones and tablets represents another challenge to adults' digital skills set. It is difficult to function adequately, either at work or in general life, without some basic knowledge of the use of information and communication technologies (ICTs). Adults must not only become proficient in computer skills but also develop their abilities to use these tool to manage information and solve problems. Adults who lack adequate ICT skills – and the OECD identified a large number of adults with little experience of ICTs – will find many routes to employment effectively blocked. Although the UK scores slightly above the OECD average for ICT skills, there is a lot of work to be done to close the digital divide. Improving ICT skills also represents an opportunity to address other basic skills needs, particularly numeracy, in a complementary way, helping adults apply their skills in real-life situations. The growing trend for accessing the internet via mobile devices means that mobile applications could have a

significant positive impact when it comes to engaging adults in numeracy learning.

PROGRAMME OVERVIEW

Maths Everywhere is a learner-centered, interactive smart-phone application aimed at adults of all ages. Most participants are drawn from informal and non-formal learning programmes, including apprenticeships, and maths and vocational courses. The application was developed as part of a nationwide initiative, Maths4Us, which included a competition for learning providers and app developers to work together to develop a new maths application. The winning app would be the one that best helped adults to see how relevant and useful maths is to everyone, everyday and everywhere, and to improve their maths skills. The potential of phones and tablets as portable, personalized learning environments meant that the mobile application was an obvious choice as medium.

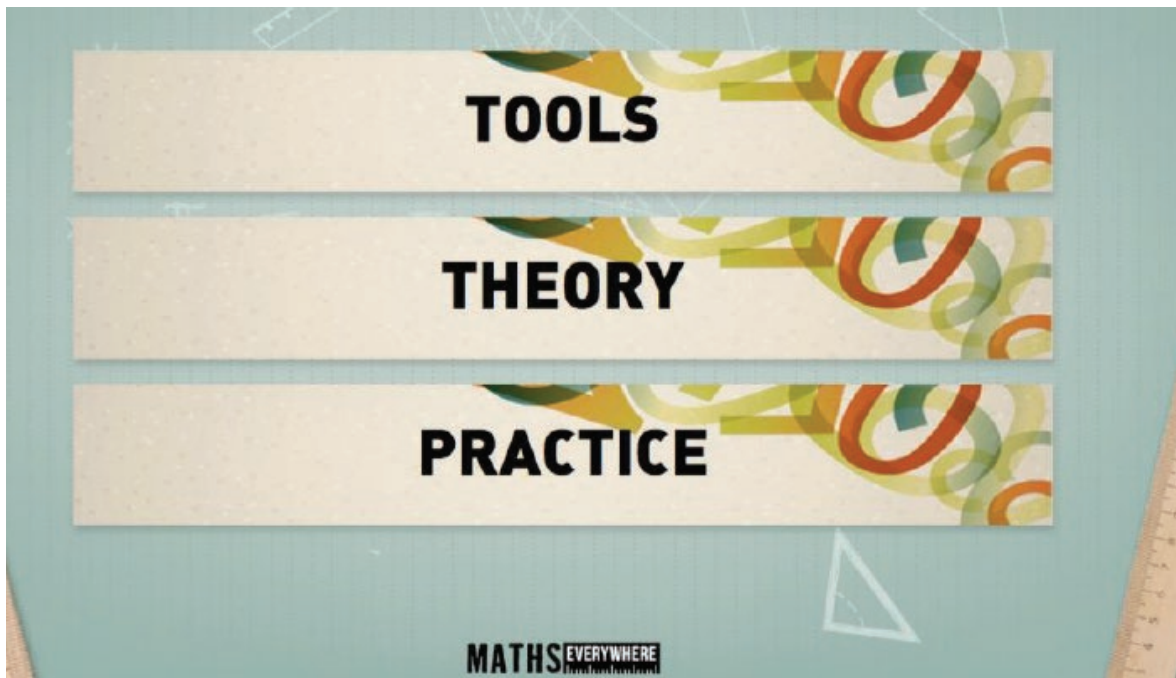
The winning app, Maths Everywhere, was chosen by public vote, and was designed and developed by Bolton College and app developers Modern-English, in partnership with NIACE and with funding from the Department for Business, Innovation and Skills. Developed using the principles of game design in order to encourage participation and continued learning, the app has since won App of the Year at the prestigious Prolific North Awards.

The app can be downloaded for free for Android and Apple phones and is available online at www.mathseverywhere.org.uk. It has three sections with tools, video tutorials and practice questions to help adults improve their skills and become more confident in utilizing their numeracy capabilities to solve real-life problems.

Aims and Objectives

The app was required to:

- ☞ Meet learner and tutor needs and be co-designed and developed by commercial developers, learners and tutors;
- ☞ Use a learner-centred pedagogical approach whereby learners can choose how and what they learn;
- ☞ Fit around the lifestyles of learners and support bite-sized learning, in particular;
- ☞ Offer dynamic content which was interactive and engaging;
- ☞ Address the needs of various learning styles, using multimedia with minimal text;



- ✎ Encourage continual learning, employing gaming principles to encourage continued engagement;
- ✎ Be relevant, with tools and questions reflecting real-life contexts;
- ✎ Support anytime, anywhere learning, with the app downloadable so it can be used where there is limited internet connectivity, from multiple devices;
- ✎ Be useful in different learning contexts, including blended or online, self-directed or differentiated learning; and
- ✎ Be capable of being repurposed. Because the app has been published in its entirety as an open educational resource the programme codes, videos, images and questions can be re-programmed for other audiences and learning contexts.

PROGRAMME IMPLEMENTATION

Teaching and Learning: Approaches and Methodologies

The primary aim of Maths Everywhere is to enable learners to acquire skills online, at times and in conditions that suit them and that fit around their other commitments.

The learning content of the programme comprises tools, theory and practice:

Tools: In the first module, participants learn to use a wide variety of useful tools which relate numeracy to issues they might encounter in everyday life,

such as splitting up a bill or converting money to a foreign currency.

Theory: In the second module, basic numeracy rules and mathematical theories are introduced through videos which include illustrations and graphics to attract learners' attention.

Practice: In the last module, learners are encouraged to try out calculation problems by themselves, using the rules they encountered earlier. When a learner submits an answer to a problem, the app evaluates it and provides instant feedback. If a learner solves the problem correctly, the app displays «Great! Keep on going» to keep the learner motivated. If a learner fails to answer correctly, the app says «Ah! Have another go», and provides hints to encourage them to re-evaluate the problem. The immediate feedback and encouragement helps keep learners motivated.

The app was developed using a number of different principles, which meant that it had to:

- ✎ Meet learner and tutor needs and be jointly designed by programme developers and learners;
- ✎ Be learner-centered, giving learners the freedom to choose how and what they learn;
- ✎ Fit with modern lifestyles, with a bite-sized learning approach;
- ✎ Use multimedia in a way intended to address different learning styles, such as visual learners, sound learners and text learners; and
- ✎ Be designed to encourage continual learning through the use of highly interactive games.

Programme Content and Teaching Material

The app content was written by basic skills tutors from Bolton College, with input from their learners. All the tools, questions and learning videos in the app are mapped to the UK's functional skills curriculum, designed by the UK government to help learners develop the mathematical skills needed to gain qualifications and succeed at work (Qualifications and Curriculum Authority, 2007).

The three modules for Maths Everywhere feature:

Everyday tools: A range of tools are provided to help people solve everyday maths problems. Sample questions include splitting the bill among several people at a restaurant, working out fuel costs for a journey, calculating childcare costs, converting currencies, increasing or reducing recipe quantities, figuring out discounts, and much more.

How to Work It Out: A series of short video tutorials aims to help users improve their skills so they can confidently solve problems for themselves (see <https://www.youtube.com/channel/UCV-Y24-8LLU7WITc7S4CYow>). Users are guided through three different levels of maths challenges – beginner, intermediate and advanced – with an increasing degree of difficulty.

Have a Go: In this section, learners can put their new and improved skills into practice, earning a badge for each topic by answering all of the questions correctly. If they give an incorrect answer, they can refer back to the appropriate video tutorial. Once badges for each section and level have been earned, a new «Challenge» is unlocked. Badges are prominently displayed to help users keep track of their learning.

INNOVATIVE FEATURES

The app was developed collaboratively by learners and tutors and was designed to help adults see the relevance of maths to their everyday lives through interactive tools they can use to carry out common types of calculation. Users can test themselves to gain social media badges, and time themselves in doing calculations to assess whether they could complete a formal assessment and compete with other learners online. The use of gaming principles encourages them to continue learning.

The app is downloadable and can be used in offline settings, including in places with poor internet connectivity. The code has been published at www.mathschampions.net, with all learning videos posted on YouTube (<https://www.youtube.com/>

[channel/UCV-Y24-8LLU7WITc7S4CYow](https://www.youtube.com/channel/UCV-Y24-8LLU7WITc7S4CYow)) so anyone can re-develop, re-use or re-purpose under a Creative Commons licence. The licence permits other users or programme developers to build upon the app legally and to share under «all rights reserved» copyright management (Creative Commons, 2013).

With push-messaging technology, learners can easily connect with providers in their local area and can receive further information, as well as face-to-face support.

Recruitment and Training of Facilitators

The app is being further developed, with larger-scale trials planned to test its use in various learning contexts, namely self-directed, unsupported learning, and blended learning with face-to-face input from providers and virtual support. It has been designed both as a stand-alone tool which can be used without tutor support and as a resource which can be used to supplement and support courses of various types.

Enrolment of Learners

Learners are generally referred to the app by their tutors, though a number have downloaded it for their own, unsupported use.

Assessment of Learning Outcomes by Students

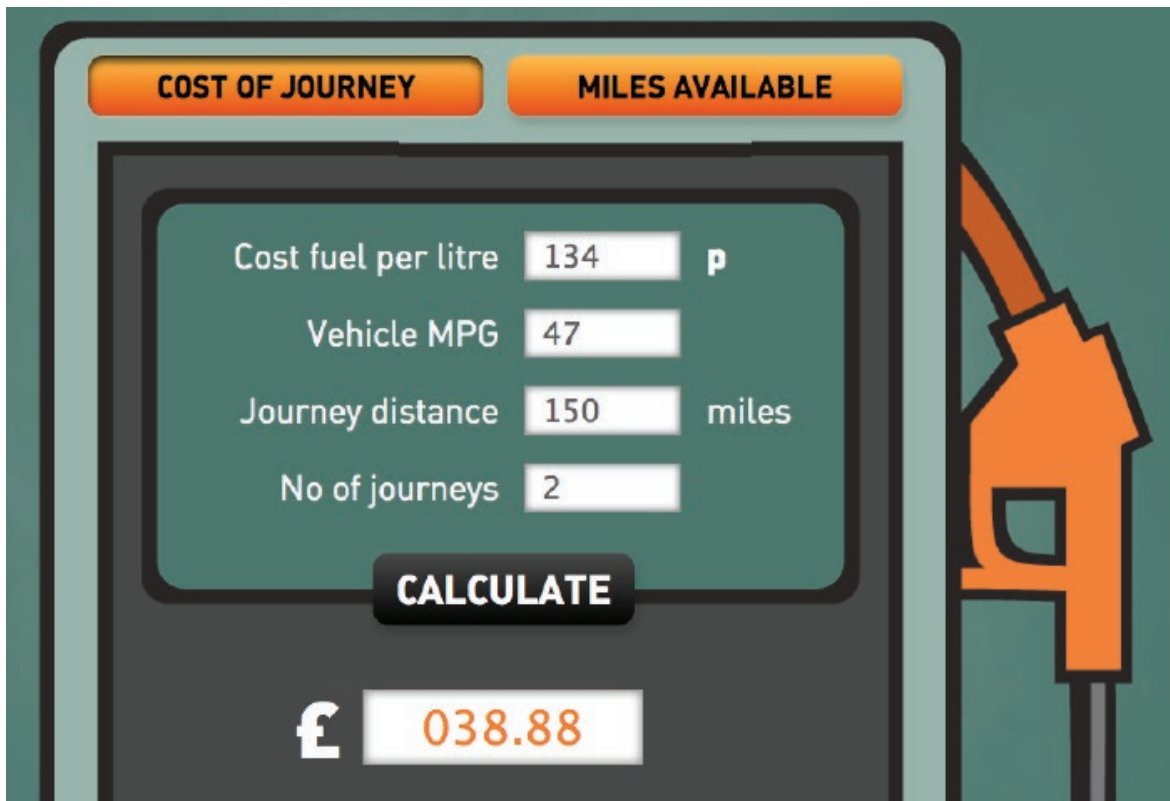
The learner is assessed at each level, gaining a social media badge when they complete the beginning, intermediate and advanced levels under each section. Each badge has been carefully developed to match the competencies described by the UK's functional skills curriculum. Learners can choose how to display or share these badges through social media tools such as Facebook or use them as proofs of competence for employers or providers.

MONITORING AND EVALUATION

Small-scale trials with learners were carried out during the development phase of the programme. Learners provided very positive feedback and anecdotal evidence of the impact on learning attainment. Larger-scale trials are now being carried out in partnership with three other learning providers. The results will be published in autumn 2014.

IMPACT AND ACHIEVEMENTS

Some 2,500 learners have so far downloaded the app and there is strong anecdotal evidence of the progress they have made in improving their numer-



acy skills. NIACE-led activity has increased the number of providers involved in the programme. At the same time, NIACE has made the app freely available to other learning providers, many of whom are gathering their own evidence of impact, with some planning to re-develop or relocate sections of the learning tool to reflect the needs of their learners.

LESSONS LEARNED

The lessons learned over the course of the programme include:

- ✎ To engage reluctant learners in maths, the learning content should be relevant and useful to them;
- ✎ Neither developers nor tutors have the full range of skills required to develop high-quality digital learning materials. The programme works the best with input from learners;
- ✎ Bite-sized learning objects are flexible and fit with different learners' lifestyles;
- ✎ Dynamic, interactive, multimedia content suits different learning styles and the needs of learners more than static, text-based content;
- ✎ Use of the principles of game design can encourage the continuation of learning;
- ✎ To widen participation, digital resources should be accessible from learners' own devices (i.e.

multi-platform) and should be downloadable to overcome connectivity barriers; and

- ✎ Making digital materials available as open educational resources offers greater use and sustainability.

SUSTAINABILITY

Maths Everywhere can be used in various ways. The app was designed to meet the needs of diverse groups of learners, so that it could be effectively embedded within different pedagogical models. As a result, teachers and facilitators worldwide can use parts or all of the curriculum content within their own virtual learning environments, or direct their learners to use it as a tool for collaboration with their peers, a means of consolidating existing knowledge, or as part of a blended learning programme to support sustainable use.

By making the app available as an open educational resource, NIACE is encouraging providers to re-develop it to suit their own needs, by adding different questions, translating to other languages, running on different platforms, or developing tools for different audiences. In this way, the app will be continuously refreshed and sustained.

COST COMPARISON

Which unit of measurement are you comparing?

No	<input type="text" value="4"/>			No	<input type="text" value="6"/>
£	<input type="text" value="3.99"/>	quantity	Vs	£	<input type="text" value="5.50"/>

= £	<input type="text" value="1"/>	for 1		= £	<input type="text" value="0.92"/>	for 1
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In the longer run, it will be possible to use the app in a wide range of learning contexts, including offender learning, financial literacy and vocational learning.

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