Initial reflections on the Ethiopia XO 5000 Programme

David Hollow,
Doctoral Candidate,
Royal Holloway University of London

May 2009
www.ict4d.org.uk

For correspondence contact:
d.m.hollow@rhul.ac.uk
Contents

1. Introduction........................................................................................................................................5
  1.1 Structure.......................................................................................................................................6
  1.2 Rationale.......................................................................................................................................6
2. Theoretical context.............................................................................................................................8
  2.1 Education in Ethiopia...................................................................................................................8
  2.2 Models of Education....................................................................................................................8
  2.3 The BlankPage Approach..........................................................................................................8
  2.4 ICT in Education...........................................................................................................................9
3. Aim and Objectives............................................................................................................................9
4. Rationale for Monitoring and Evaluation......................................................................................10
5. Implementation.....................................................................................................................................12
  5.1 Programme implementation........................................................................................................12
  5.2 Implementation Partners............................................................................................................12
  5.3 The BlankPage role in implementation......................................................................................12
6. Monitoring and evaluation methodology......................................................................................13
  6.1 Overview of individual methods................................................................................................14
    6.1.1 Individual Interviews...........................................................................................................14
    6.1.2 Focus Groups.......................................................................................................................14
    6.1.3 Stories..................................................................................................................................14
    6.1.4 Observation sessions...........................................................................................................14
    6.1.5 Baseline test.........................................................................................................................14
7. Analysis..............................................................................................................................................16
  7.1 View from the students...............................................................................................................16
  7.2 Teacher training...........................................................................................................................17
  7.3 Integration.....................................................................................................................................18
  7.4 Curriculum based content...........................................................................................................19
  7.5 Product development...................................................................................................................19
  7.6 Partnership logistics....................................................................................................................19
8. Lessons learnt......................................................................................................................................21
9. Considering the future......................................................................................................................23
10. References.......................................................................................................................................24
12. Appendix.........................................................................................................................................29
Abbreviations

ECBP  Engineering and Capacity Building Program, the project lead partner
EFA  Education For All
MoCB  Ministry of Capacity Building
MoE  Ministry of Education
NOC  Network Operations Centre
OLPC  One Laptop Per Child
UPE  Universal Primary Education

Relevant Terms

Akili Reader  Interactive Textbook viewer software produced by BlankPage Switzerland
Apposit  Ethiopian implementation partner for BlankPage
BlankPage  Swiss educational software provider who produce the Akili Reader
Ethiopia XO 5000  Programme name for distribution of 5000 XO laptops in Ethiopia
Give One Get One  Scheme run by OLPC to facilitate donation of XO laptops
Sugar  Primary operating system used on the XO laptops, created by OLPC
XO Laptop  Low cost sub-notebook computer developed by OLPC, intended for distribution to children in developing countries

Acknowledgements

Many people have contributed to this exercise. Particular thanks to:

BlankPage - Bjorn Everts, Kuno Jung and Matthew Herren
ECBP - Thomas Rolf, Marton Kocsev, Eskinder Andualem, Helina Tilahun and all the interns
Apposit - Adam Abate, Eric Chijioke, Simon Solomon, and Amanuel Brook and Meron

Thanks also to all the teachers, students, headmasters, community members and Government officials who contributed to the research.

1. Introduction
This independent report offers initial reflection regarding the implementation of the XO 5000 project in Ethiopia. The programme introduced 5000 XO laptops, also commonly known as the $100 laptop, into five Ethiopian primary schools. The report focuses primarily on the educational content on the laptops, independently assessing the role of BlankPage and the Akili interactive textbook reader.

Although the associated research was conducted in partnership with BlankPage and ECBP, the perspectives expressed in this report are the author’s alone. The content complements the recent BlankPage publication titled ‘The Role of BlankPage (formerly Eduvision) in the Ethiopia XO 5000 Programme: Formative Evaluation’. However, all observations regarding the programme model, mode of implementation and associated challenges are in no way linked to either BlankPage or ECBP.

1.1 Structure

The report begins with a theoretical context, providing brief overview of education in Ethiopia, different models of education and the BlankPage approach to learning. A summary of ICT for education in Africa is then outlined, situating the programme within a broader context. The aim and objectives of the study are then given, alongside the rationale for the monitoring and evaluation undertaken and a summary of programme implementation, focusing on the BlankPage role and current context.

The focus of the report then shifts to the methodological approach to monitoring and evaluation, with each of the methods outlined. The analysis of the research is documented in six themes: the view from the schools, the issue of teacher training, the importance of integration, curriculum-based content, product development and multi-stakeholder partnership. Following this, significant lessons learnt from the process are shared in the form of recommendations for the wider ICT for education community. The report closes with future possibilities for both BlankPage and the XO initiative in Ethiopia.

1.2 Rationale

There is much debate surrounding the concept of providing low-cost laptops to children within the context of a developing country. The author is conversant with these debates and does not intend to adopt a position on the ultimate validity or viability of such initiatives in this report. The intention is to provide documentation of the process undertaken, lessons learnt and challenges encountered in introducing laptops with educational content into Ethiopian primary schools. The hope is that sharing these experiences will help improve practice amongst other programmes currently exploring the effective introduction of ICT to education systems across the developing world.

Throughout the process all those involved with the research operated from an understanding that undertaking process-based monitoring and evaluation alongside implementation would help ensure maximum educational benefit from the programme. The report is written now, prior to the completion of a full impact assessment, in light of the significant lessons learnt which may be of benefit to the wider ICT for education community. It also contributes to the
forthcoming collaborative evaluation from ECBP with contributions from BlankPage and the University of Groningen.

Despite the many challenges encountered, the BlankPage decision to adopt a process based approach to monitoring and evaluation had significant positive impact regarding the way in which the XO 5000 programme was implemented in Ethiopia. Reflecting back on the value of the monitoring and evaluation exercise, ECBP commented that:

‘It is fair to say that the focus group that you conducted with the teachers in April was a significant turning point for the programme. It was a shift from an authoritarian approach to one where we engaged more with the teachers and the schools … setting out the M&E system before deployment meant that we had a goal to reach. Before that it was just about deploying computers and struggling with support’
2. Theoretical context

2.1 Education in Ethiopia

Ethiopia is faced with significant educational challenges from primary through to tertiary. Despite efforts to provide free universal access to primary education (UN 2000, EFA 2000), national figures demonstrate that only 60% of children are enrolled, with an average of 72 primary school pupils for every teacher (EFA, 2008). As with other countries across the region, increasing class sizes in Ethiopia are leading to significant difficulties in maintaining levels of attainment (Fredriksson, 2004; Naidoo, 2003). Improving educational quality, whilst ensuring equity, therefore constitutes a major challenge and is dependent upon the manner in which teaching is undertaken, in regard to both pedagogical approach and curriculum structure. Widespread lack of textbooks and inadequate access to extra-curricular learning materials also constitute significant challenges.

2.2 Models of Education

The dominant mode of school-based education in Ethiopia can best be understood within a long-established teaching model, influenced by both cultural and religious traditions (Lasonen et al. 2005). Student obedience and subservience are prioritised and emphasis is placed upon teacher authority. This model plays a significant formative role for the educated population as most current teachers and related professionals received their schooling within such a context and thus often perpetuate the top-down, rote-based approach (Smith and Ngoma-Maema 2003; Negash, 2006).

Such an approach stands in contrast to the notion that education should go beyond learning a set of prescribed answers which form the basis of assessing attainment (Croft 2002). An alternative priority aim is to conceptualizes education as the development of capital for oneself (Ellerman 2004), providing skills which fit ‘the present and future needs of the particular learners in question and the community, given the particular circumstances and prospects’ (Fredriksson 2004 p.2). At one extreme, this approach can constitute constructivism, a highly student centered, autonomous discovery-based approach to learning where the teacher adopts the role of facilitator (Cromer 1997). This is the pedagogical stance promoted by OLPC and reflected in the Sugar applications on the XO laptops, tailored to activity-based tasks that a child completes without direct supervision.

Much educational discourse promoting ICT for education presents current classroom-based learning in Africa as occurring at the rote-based extreme, and advocates constructivism as a solution to this. However, such a dichotomy fails to acknowledge the subtle nuances of teaching which do not fit easily into neatly prescribed categories. Whilst schooling in Africa certainly requires a more flexible approach in places, this does not mean that constructivism should be viewed uncritically as a solution to the current challenges (Mayer 2004). Any attempt to impose a fully constructivist approach to education within Ethiopia, as promoted by OLPC, would be culturally inappropriate and face significant challenges, requiring a
radical and unrequested shift in established pedagogy. The Sugar-based applications are not fully contextualised nor suited for incorporation within a formal school curriculum.

2.3 The BlankPage Approach

BlankPage technology acts as mediator between the established rote based model and more interactive, participatory approaches to education. The functionalities offered by Akili Reader positions the student in a role where they shape their own flexible learning (Ellerman 2004) whilst remaining within the framework of a curriculum based environment (Kirschner et al 2006). This is achieved in Ethiopia through utilising local language content from Amharic textbooks (Stroud 2002, Mazrui 2000) as a foundation for additional exploratory content.

The Akili Reader provides a unique opportunity for participating students and teachers to operate within the existing structures of the curriculum and wider conventional educational culture whilst also being given the freedom to develop valuable skills of creative thinking and independent enquiry (Carr 2005; White 1982). For a more detailed study regarding the specific educational topics associated with the introduction into classrooms of the XO laptop please refer to contrasting reports from Hartel (2008), Kort and Reilly (2008) and Nugroho and Lonsdale (2009). For a broader summary of various low-cost computing devices being introduced into the education arena across the developing world see Pal et al (2009).

2.4 ICT in Education

There is significant attention focused upon the potential for ICT to assist in leapfrogging educational constraints within developing nations (Pye and Stephenson 2003, Tinio 2003, Leach 2005), with much enthusiasm for a possible technology-enabled breakthrough in learning (Wagner 2005 p.6). It is suggested that the last decade have resulted in the emergence of ‘a new landscape for education’ (Keats 2005) with technology positively effecting student motivation (InfoDev 2005) and potentially leading to a significant increase in learning (Lemke and Fadel 2006). However, this is challenged by sceptics who suggest an absence of substantial evidence that the introduction of technology into education has actually instigated more than incremental changes to the field (James and Miller 2005).

Wagner et al (2004) note that ICT for education projects have had a variety of outcomes with negative impacts including the reinforcing of dependencies, imposition without community involvement and collapse due to lack of funding or political commitment. Having assessed a wide variety of studies, Kozma and Wagner (2005 p.21) support this in concluding that there is ‘no consistent relationship between the mere availability or use of ICT and student learning’. As summarised by InfoDev (2005 p.5), ‘the impact of ICT use on student achievement remains difficult to measure and open to much reasonable debate’. Within this context, there is increasing recognition regarding the role of rigorous monitoring and evaluation to assess the educational impact of introducing ICT into the classroom.
3. Aim and Objectives

The primary aim for BlankPage in conducting a monitoring and evaluation exercise was to assess both the feasibility and impact of introducing the Akili Reader software into an Ethiopian public primary school. However, in order to reflect the involvement of ECBP as the lead partner in this programme, the remit of the monitoring and evaluation exercise was expanded to assess the wider feasibility and impact, including capacity development, XO laptops and the Akili Reader software.

The primary objectives were to:

- Assess the potential for the programme to influence the rote-based approach to learning and instigate transition to a more active and participatory learning environment
- Assess the impact of the programme on student attendance and motivation
- Assess the impact of the programme on teacher motivation and enjoyment
- Assess the impact of the programme on parents and the wider community regarding perception and value of education and technology

Additional objectives specific to BlankPage were to:

- Test and enhance the Akili Reader software in an educational environment where students and teachers had little or no previous experience with computers
- Test and enhance the book conversion process, especially using books in languages and alphabets other than English
- Build a strong partnership with the relevant implementing bodies in Ethiopia
- Better understand the effectiveness and relevance of the Akili solution for schools in Ethiopia

Although the content of this report reflects the emphasis of these objectives, comprehensive analysis should be sought in the associated reports from BlankPage and ECBP.
4. Rationale for Monitoring and Evaluation

Global emphases on good governance, aid effectiveness, and accountability have led to increased attention on monitoring and evaluation within the development sector (Elkins 2005). BlankPage aimed to incorporate a specific focus on monitoring and process evaluation throughout the product development and implementation. Aiming to counter the frequent assumptions of neutrality, objectivity and universal applicability (ITU 2007), a multi-method, systems-based approach (Watson 2006) was adopted throughout. Emphasis was placed on the three guiding principles of understanding socio-cultural context, (Horstman 2004), minimising abuse of power (Eyben 2005) and maximising capacity building for all stakeholders throughout the process. The monitoring and evaluation was undertaken in partnership with stakeholders and all the methods were designed in consultation with relevant authorities to ensure cultural appropriateness. Similarly, all interactions with stakeholders in the schools were conducted in the local language. Following the completion of the BlankPage monitoring and evaluation, all the methods designed were transferred to ECBP to use as they considered appropriate, in order to assist in their ongoing assessment of the programme.

An initial objective of the research was to provide an impact assessment of the Akili Reader software when used on the XO laptop in Ethiopia. A variety of constraints have meant that at the time of writing it has not been possible to conduct a comprehensive statistical assessment of impact. This is primarily due to logistical and resource challenges outlined in the analysis. Despite this there are valuable outputs concerning qualitative impact, challenges and recommendations which will serve to inform the BlankPage approach to future projects.
5. Implementation

5.1 Programme implementation

In early 2008 the OLPC *Give One Get One* initiative, in conjunction with donations from the city of Florence, facilitated the launch of the XO 5000 programme. ECBP provided the programme lead within the MoCB, with the objective of distributing and implementing 5000 XO laptops into the classrooms of four primary schools. Two of these schools, Menelik II and Atse Noad, are located in Addis Ababa and were involved in the original pilot phase of the project in 2007. The other two schools where chosen for their rural location and regional diversity. Mullo Sayyoo is situated a two hour drive from Addis Ababa in the Oromo region, and Rema six hours from Addis Ababa in the Amhara region.

The school in Rema relied on the donation of solar panels from the German Solar Foundation in order to power the laptops. However, the solar panels provided by the foundation transpired to be inadequate for powering the laptops. As a result ECBP chose to recall the laptops from this school. The recalled laptops are now destined for a school in Mek’ele, the capital of Ethiopia’s Tigray region. Negotiations with the school and relevant authorities have not yet been finalized and the deployment of the laptops has yet to occur.

5.2 Implementation Partners

Both programme implementation and monitoring and evaluation have been conducted in multi-stakeholder partnership. The lead partner is ECBP, the programme initiator responsible for strategy, logistics and overall implementation. ECBP are encompassed within the MoCB which is the Government ministry responsible for the programme. The MoE also assisted the programme through content provision and in an advisory role. OLPC contributed through product provision and consultancy. BlankPage provided the Akili Reader software and also gave initial lead regarding monitoring and evaluation. Apposit LLC was the local implementation partners for BlankPage and focused on content conversion. Royal Holloway, University of London contributed with monitoring and evaluation expertise throughout the implementation process. Groningen University also participated with a parallel and complementary longitudinal monitoring and evaluation exercise.

5.3 The BlankPage role in implementation

The BlankPage partnership with ECBP began in December 2007 with the early pilot phase of 60 XO Laptops (Everts et al 2008). This initial involvement enabled BlankPage to conduct product testing in addition to assessing the technical and educational suitability of the BlankPage Akili Reader software for use in Ethiopian classrooms. This phase demonstrated that BlankPage could offer a relevant educational solution to the XO5000 project.
Prior to the rollout of the XO 5000, BlankPage formed an implementation partnership with Apposit, a technology solutions company situated in Addis Ababa. The aim of the partnership was to convert government issued curricular textbooks into an interactive electronic format that could be used on the Akili Reader software. The intention was for the digital textbooks to be distributed and updated wirelessly from a low cost school server. The initial strategy for BlankPage was to provide all four schools with interactive textbook content and a wireless distribution system. However, the complexity of the task necessitated scaling down to concentrate on Atse Noad school in Addis Ababa. The objective in doing this was for BlankPage to improve its systems and procedures in a single school with the intention of scaling up in the future.
6. Monitoring and evaluation methodology

A variety of methods were utilised by BlankPage in undertaking the monitoring and evaluation activities. Other programme partners also employed additional methods in conducting their related research. Due to the early stage of the programme, the decision was taken to employ a multi-method approach focussed largely on qualitative data collection. This fitted with the aim of documenting stakeholder perceptions in order to improve the product content and implementation procedure.

6.1 Overview of individual methods

6.1.1 Individual Interviews

Approximately 25 interviews were conducted with individuals from partner organisations and headmasters, parents and government officials. A variety of semi-structured formats were followed based upon an interview guide approach (Patton 2002). Each interview contained more planned structure than an informal conversation but avoided determining the exact wording and sequence of questions in advance. Confidence to embrace unplanned deviations from the questions allowed exploration of rich dialogue as it developed (Burgess 2003).

6.1.2 Focus Groups

Some 12 focus group discussions were conducted with teachers and students in groups of between four and ten. These groups lasted for between 30 and 120 minutes and were conducted in Amharic and English, according to participant preference. Each focus group began with a structured introduction (Unwin, Tan and Pauso 2007) followed by flexible discussion with guiding questions from the facilitator. This ensured consistency and provided a commonly understood framework to facilitate both clear communication and a safe environment for dialogue (Valentine 1999).

6.1.3 Stories

During the group interviews, particular stories were frequently alluded to and it was valuable to explore them further by conducting detailed follow-up with individual participants. The 12 stories gathered were based on in-depth conversations with an individual child and accompanying interpreter regarding a particular experience or perspective that they had expressed. Listening to individual stakeholders in the form of unstructured conversation provided a valuable opportunity to learn from their experiences and it sometimes revealed significant and unanticipated programme impacts (Chambers 1994).

6.1.4 Observation sessions
Observation involved participating in a variety of activities within the programme setting, including teacher training and feedback sessions (Creswell 2005). This was time consuming but constituted a valuable method in gaining a more comprehensive understanding of the programme (Herbert 2000). It was understood that the presence of members of the research team within the classroom would alter the reality of the observed engagement (Rose 1997). Despite this, it was decided that the approach constituted a positive alternative to the low level of education-related research in the developing world that is conducted through actually spending time in classrooms with pupils and teacher (O’Sullivan 2005).

6.1.5 Baseline test

An Amharic baseline test containing curriculum-based and life-skills content for students in Grades 6 and 7 was developed in collaboration with the Ethiopia Tests and Measurements Centre. The objective was quantitative assessment regarding the impact of the introduction of the technology into the classroom on the attainment of the children, in regard to both subject-specific and worldview knowledge. Children were tested in schools prior to implementation of the programme, however, significant delays in rollout meant that the baseline could not be administered until September 2008 and thus the second stage of the baseline is still to be completed.
7. Analysis

The analysis of the monitoring and evaluation is categorised into six themes, each of which are illustrated through participant responses. Each theme refers to issues pertinent to the overall project implementation but focuses on concerns specific to BlankPage. The analysis begins with an initial view from the children. This highlights the centrality of the two subsequent themes regarding need for teacher training and classroom integration. The central role of content provision through the Akili Reader is then assessed, demonstrating the potential of the software to meet the identified needs. Following this, the process of product development is outlined, alongside an analysis of the benefits and challenges of operating in partnership.

The purpose of structuring the analysis in this manner is to document the findings of the monitoring and evaluation in such a way that will be accessible to the implementing partners and also to a wider audience. The intention is that, in providing context for the following section regarding lessons learnt, this will be a valuable resource which others can utilise.

7.1 View from the students

A variety of perspectives were heard from students, teachers and headmasters regarding the introduction of the laptops into the schools. There was widespread enthusiasm from almost all children regarding the initiative but they had varying perspectives regarding the educational benefit of the programme.

‘If we could have anything I would want all the books to be in both English and Amharic because I find English very difficult’

(Female student, G7)

‘When they first gave us the laptop I was worried how to use it, I took it home and wondered how my parents were going to respond... they said it is good for me to have it. Now I know how to do most things with it. There is not much subject matter on the laptop, I would like it more if there was more content on it, but for now I like using ‘record’.’

(Female student, G7)

‘At first my parents like me having the laptop but now they are complaining because we are spending too much time on the laptops – it is new for us so we are using it all the time and not studying as much as we used to’

(Male student, G8)

Within the urban schools, many children were already familiar with the concept of a computer prior to implementation. However, in one of the rural schools, during the initial focus group where the facilitator asked the children to draw a picture of a computer, she was told ‘we have never seen a computer so we don’t have any idea of drawing it’.
The generic observations from time in the schools identified the key themes of teacher training, integration and curriculum based content.

7.2 Teacher training

Effective teacher training was considered by all stakeholders to be a vital ingredient for programme success. Basic training was provided to all teachers but most of them claimed the quantity was insufficient.

‘The project is going well but we need more training. Most of the students are now more advanced than us – so we need training in order to be able to teach them. We need both practical and theoretical training and we need it to be out of class time so that it does not conflict with our teaching’

(Male teacher, G4)

The limited training on appropriate use of the laptops led to many teachers lacking confidence. As expressed by the headmaster of one school:

‘Most of the children are using the laptops at home - we need to train the teachers more about how to actually make use of the laptops in the classroom – we haven’t had this and need additional training for them... The problem is, how is that laptop useful in the classroom? What is the methodology? That is the great problem and the teachers are asking – how can we manage these laptops in the classroom?’

7.3 Integration

The issue of appropriate usage of the laptops within the classroom proved to be a significant challenge for the programme. When conducting focus groups following implementation, teachers noted that the laptop could act as a distraction from learning in the classroom and interfere with an already demanding teaching schedule.

‘The main problem we are facing is the students are using the laptops in the classroom and are not listening to the teachers. We forbid them from bringing them into the classroom but they are still bringing them and they are disrupting things. And now they have them at home it means they are not doing their homework, they are playing on the laptops with different games. So we have had parents coming in to complain that their children are not doing their homework because they are playing on the laptops too much.’

(Female teacher, G3)

Whilst all teachers recognised the need for additional training to enable more effective use of the newly received laptops, the goal of integration was not universally agreed. Most teachers either suggested that training would help with engaging in the daily routine of the children
across topics, whilst others suggested that a more appropriate intervention would be to restrict laptop usage to a specific laptop lesson each week. As noted by the project coordinator for ECBP, the challenge surrounding integration remains a pertinent issue for the coming months.

‘At rollout there was not a focus on classroom integration, it was the kids trying to explore by themselves. The integration has not yet started, the laptops are not really being used in the classroom – the main task now is to do that. The teachers want a lot more training from us in how to use the laptops in the classroom...it takes a lot of effort to challenge the teaching methodology’

(Project Co-ordinator ECBP)

The integration of laptops into the routine of the classroom did not occur automatically. There is therefore need for the inclusion of curriculum based content on the laptops to assist in the teaching and learning process.

7.4 Curriculum based content

There was widespread feedback from all stakeholders regarding the need for more curriculum based content to be included on the laptops.

‘It is really good to have the books and the exercises on the laptops in order to develop the reading and writing skills of the children. It is better to have the books in Akili Reader than to have them on PDF. We prefer that because we can do more things on it. With the PDFs all we can do is just read but with Akili Reader we can write and do exercises that help the children to develop their skills’

(Female English teacher, G6 and G7)

‘We need more reference books on the laptops, things about History and Geography, things that help them visually. For example, if Kilimanjaro is mentioned in the text then they should see a picture of it, and maps should be included to. This is important because it helps us to teach more effectively and the children understand more easily... It is good for the children to be able to add notes related to the subjects. But in order to do that we need more information. It would be good if they can be connected to the internet in order to get more information from there.’

(Male Deputy head teacher)

7.5 Product development

Sustained product development of the Akili Reader is required in order to ensure effective classroom integration. Much progress has been made but there remains room for improvement. BlankPage encountered numerous technical challenges associated with converting the textbooks for use on the laptops. This was largely due to complexities of
language and resulted in a delay of installation of the textbooks on the laptops. Also contributing to this delay was the failure of the automated book installation process created by BlankPage. The mesh network (a peer to peer wireless networking system used by OLPC) conflicted with the wireless signals of the school server when more than 50 students attempted to load books at the same time.

Despite the challenges, the Akili Reader was widely appreciated for its ability to deliver clear text driven content on small screens, providing a stimulating and functional user interface using low-end hardware. It allowed the textbooks to become the primary source of interaction for the children when using the laptops. Alongside this, the tools for adding notes, answering questions and searching within the text contributed to the experience of interactive learning.

It is clear that the long-term success of the Akili Reader is dependent on the volume, quality, diversity and accessibility of the content which it displays. Now that the basic functionalities of the Akili Reader are operating effectively, it is possible to begin the introduction of more advanced capabilities that will enhance the potential of the learning tool. Increasingly flexible software is required which can be driven by appropriate content and functionality, ensuring ease of use for both students and teachers.

### 7.6 Partnership logistics

The rollout of such an initiative requires clear planning, structure and support. Within the context of the multi-stakeholder partnership there were significant challenges surrounding logistics and implementation. As noted by one partner,

> ‘It was especially difficult because the implementation plans changed so much and the starting dates kept changing. Many of the delays were unavoidable because the project was new, the developing context, fitting with school schedules, political decisions – things you can’t totally plan at the outset’

(Partner)

The number and diversity of partners was both a strength and challenge within the implementation process. The changing goals and limited resources of the partners meant that at various points, each one was unable to maintain commitments. As one partner noted, the commitment to partnership did have negative implications for efficiency:

> ‘We should have been more self-reliant. It is good to be in partnership but we should have minimised our dependency’

(Partner)

In future, such a programme would benefit from all partners agreeing to clear definition of roles and responsibilities prior to the commencement of the partnership. Maximum efficiency would come from this being based on the core competencies of each partner. The changing context for BlankPage unfortunately required them to scale back their involvement in the programme. In order to ensure that the focus on monitoring and evaluation are continued, BlankPage have passed on their methods to ECBP with the required training in order for them to build upon the research conducted.
Alongside this, a significant strength of operating in partnership was the capacity development for monitoring and evaluation. ECBP staff were trained in effective monitoring and evaluation methodologies and thus were able to sustain the activities undertaken. This emphasis on capacity development was emphasised by ECBP regarding the programme as a whole:

‘The strength of working in partnership is that it leads to local ownership and builds capacity’

(ECBP)

8. Lessons learnt
Significant lessons have been learnt through the process of the implementation and monitoring and evaluation and six of these are outlined below. The intention is to share these lessons so that they can be of benefit to other stakeholders and related programmes.

There are a variety of perspectives regarding the primary purpose of the XO 5000 programme

A recurring challenge in assessing the programme was the diversity of perspectives and motivation amongst stakeholders. As articulated by one government employee, complexities exist due to the fact that the XO 5000 programme ‘is seen as an ICT programme ... not an ICT for education programme ... getting beyond this is really hard’. Agendas concerning political and economic motivation within government and the private sector are often stronger than the educational agenda which is theoretically driving the programme. However, it was refreshing to encounter exceptions to this, with some stakeholders who did prioritise the programme due to its potential educational benefit. As stated clearly by one headmaster,

“We are not interested with the technology but are very interested with the things that can help the teaching and learning process. In order to begin this you need to understand the technology but after that it is about the education’

(Headmaster)

Children enjoy playing with the laptops

There is clear tendency for the students to want to ‘play’ and experiment with the laptops and this has both positive and negative potential repercussions. However, the tendency to ‘play’ needs to be utilized in a more effective manner so as to reflect the educational aims of the project. A clear link needs to be made between the games, activities and functionalities that are available on the laptop and the curriculum within which the education is occurring. This may also necessitate sourcing subject-specific educational games that cover a wide range of age groups and increase in complexity as skills develop.

Classroom integration and teacher training remain the long-term challenges for programme sustainability

There remains a disparity between the espoused situation of curriculum based learning with the laptops in the classroom and the more dominant reality of home and non-curriculum usage. The long term goal for such a programme remains full integration of ICT into the classroom. A possible option is to adopt a gradual approach facilitated through provision of the necessary curricular related content on the laptops, naturally leading to a more integrated use of the technology. The approach to teacher training should incorporate the fact that teachers are busy and were often reluctant to spend their time out of school hours using how to use the new technology. The potential for providing financial or other incentives should be considered if the training requires the teachers to work outside their normal hours of employment.

The initiative was hampered by a pressure to participate
The prestige associated with being a school selected for an ICT programme meant that some stakeholders were unwilling to criticise any of the activities that were taking place. One headmaster reported that all the teachers in his school were welcoming the laptop training and eager to learn. However, when in discussion with the teachers it transpired that they were dissatisfied and wanted financial incentives to participate, with one teacher commenting, ‘if there was some kind of incentive all us would have been interested more than we are now...’. A government employee confirmed this in confidence, reporting that a teacher had told them they did not want to participate in either training or the monitoring and evaluation process, and were only attending because they felt forced by the headmaster. Awareness regarding cultural and personal reluctance to engage with critical feedback should be incorporated into both future programme implementation and monitoring and evaluation.

The Akili Reader has a significant role to play in ensuring that the educational potential of the laptop is more fully realised

The future of the XO 5000 and similar programmes involving low-cost laptops for education may be dependent upon ensuring that appropriate curriculum-based content is installed from the outset and that sufficient training is given for effective utilisation. Thus, whilst effective training in how to make use of the technology remains essential, the provision of appropriate content may be the most significant long-term key for successful integration.

Although the Akili Reader showed great potential to enhance the educational benefit of the programme, the impact was hampered due to the required scale back from four schools to one school. BlankPage have learnt to be more conservative when estimating the challenge of introducing the Akili Reader into an Ethiopian school environment. The disappointment was highlighted by ECBP:

‘The BlankPage choice to scale back is a big blow because we based our cooperation on having all the content in all the regions in Akili Reader. We invested a lot of money into translating and scanning the content. We wanted Akili Reader because we wanted it to be interactive.’

The monitoring and evaluation exercise had significant positive impact on the manner of programme implementation and capacity building of partners

The decision to invest in monitoring and process evaluation through the initial stages of the programme had positive repercussions for the wider implementation approach of the partners. The decision to spend time conducting focus groups and interviews with stakeholders enabled the implementation team to gain a better understanding of the needs and concerns that were being faced in the schools. Participating with stakeholders in this manner also enabled the programme to be introduced in a manner which was more culturally and logistically appropriate than would have otherwise been the case. The approach undertaken by BlankPage enabled other partners also to develop capacity for effective monitoring and evaluation. This meant that a regular cycle of feedback could be incorporated into the implementation of both the Akili Reader development and the programme as a whole.
9. Considering the future

The XO 5000 programme may expand in the future if funds become available. If this occurs then it is important that awareness is raised with schools, parents and relevant authorities in the planning process, prior to and during implementation as a means of ensuring quality and relevance whilst promoting engagement and ownership. The programme should be framed in such a way that the teachers involved can see the tangible benefits of using laptops in the classroom, both for them and the students. Without this, they will quickly lose motivation and lack incentive to maintain participation. The BlankPage provision of digitized textbooks ensures that the laptops can be integrated into the curriculum. However, there remains significant challenge regarding incentive. Good quality, interactive digitised books may offer substantial added value in this respect, sustaining both teacher and student motivation through providing demonstrable educational benefit.

Following the positive feedback from use in the trial school, BlankPage is now making Akili Reader available to the other three schools within the XO 5000 programme. The emphasis on monitoring and evaluation is being sustained throughout future implementation in the XO 5000 programme. This independent report contributes to the BlankPage report and overall collaborative report led by ECBP that will be published shortly.
10. References


EFA, 2008. EFA Global Monitoring Report 2008 – Education for All by 2015, will we make it?


Leach, J., 2005. DEEP IMPACT: an investigation of the use of information and communication technologies for teacher education in the global south. Researching the Issues, 58. DFID


O’Sullivan, MC., 2005. What is happening in the classroom? A common-sense approach to improving the quality of primary education in developing countries. Teacher Development, 9, 3, 301-314


Valentine, G., 1999. Being seen and heard? The ethical complexities of working with children and young people at home and at school. Ethics, Place and Environment. 2, 141-155


12. Appendix

Student stories

In my spare time I like reading books, reference books, my grade book, fiction books, science and technology books. I also like helping my parents. I do this by washing clothes and making my bed. I like coming to school and I like the teachers, my favourite subjects are Biology, Physics and Chemistry. I am also participating in clubs after school – I am part of the HIV club. The club helps us study about HIV and learn about transmission and prevention. I also teach about HIV and human rights to the younger children. My ambition is to be a doctor so that I can treat sick people and do research to find medicines that will find cures for diseases.

I was happy when I received the laptop. It is helping us to learn about things and improve reading in English. I also like the laptop because of the books, especially learning about ‘big cats’ and the planets. We practice writing on the laptops – it is easy. One problem is that at the moment we don’t have civics books on the laptop and would like it if that could be loaded. We send messages on the laptops to each other in the class. Some people use it for education, some people use it for just talking – but most of the messages being sent in the classroom are not educational.

My parents are happy that I have the laptop but now they say that we spend too much time on it and are studying less. I mostly use the laptop for non-educational books, for games and also for browsing the applications. The bad thing about the laptop is that I am afraid it will be lost. I have lost most of my books, the text and exercise books, so now I do most of my work on the laptop. I prefer using the laptop to working on paper but I am afraid that if I use it too much I will get sick and have problems with my heart as other students tell us that this is what will happen. It would be easier to read on the laptops if there was a table of contents and then we could check on the chapters of the book. I think the laptop is better than paper for answering questions and doing exercises.

Sara Tolera (female), 14, G8, Atse Noad

*****

My hobby is playing football, when I grow up I would like to be a football player because there are not many women football players from here. When I grow up I would also like to be a doctor in order to find cures for diseases. I like the way the teachers teach in our school because it is simple to understand. My favourite subjects are Biology and Geography. But I don’t like how small our school is because there is not space for us to do things.

I like reading the books on the laptop. I also like reading the wiki and getting more information from that. It is easy to read it even though it is in English. We get information about the story of Mandela, how we was the president of South Africa and did good things. Most of the time I am practicing typing and reading books on the laptops. I prefer working on paper to working on the laptop because the text on the laptop is too small and also because
paper is what I am used to. It would be easier to read on the laptop if there was a better way to scroll within the book. I would prefer doing exercises and questions on the laptop rather than on paper because this will help me to type better.

Eden Ayalew (female) 14, G7 Atse Noad

*****

In my spare time I like playing tennis and dancing - I do different kinds of African dancing and in the future I would like to be a dance trainer. I also help my little brother with his learning. In our school I like the teachers because they are teaching us properly and my favourite subjects are Biology and Chemistry because Biology is the study of life. Although I like school, I don’t like the toilets because they are not cleaned properly and also there is a shortage of water because the taps are not all working.

I was very happy to receive the laptop. There is a shortage of books here – but now that the books are on the laptops then everyone can have the textbooks. Also the laptops entertain us with listening to music and taking photos. We send messages to each other in the classroom about our families. We send pictures to each other mostly. Most of the time I read books on the laptop and I also take photos of my brother. I prefer using the books on the laptops rather than paper because it is easy to carry and I can do my homework on the laptop and then also entertain myself. It would be easier to use the books for reading if there was a way that we could scroll down more easily. I would also like to have questions on the laptop, I want to do exercises because I want to improve my typing.

The bad thing about these laptops is that we are afraid that the other students will swap our batteries – replacing our charged ones with their ones that are not charged. My parents don’t let me charge the laptop at home because of the cost and also because they don’t want me to spend all my time on it.

Minas Addisu (female), 14, G7 Atse Noad

*****

In my spare time I like playing football and also when I am at home I help my parents by doing the cleaning and going to the shops to buy things. This takes me a lot of time but it is not difficult. When I grow up I would like to be an athlete and represent my country as a marathon runner. Otherwise I would like to be a doctor. In school I enjoy every subject but my favourite subject is Biology because it is about life. I like the teachers and the way that they teach us well, they check on us and give us additional classes when it is important. But I don’t like the compound because it is too small so we can’t do things.

I like having the books on the laptops, they are loaded on so we can carry the laptop but don’t have to carry the books. There are textbooks and we get to read the storybooks which is good. I would also like it if there could be audio books on the laptops in addition to the textbooks – so that we can listen and learn. It is also teaching us how to use a computer. If we could improve something I would like to be connected with other laptops (in addition to other XO’s). We use the laptops to chat with each other sending messages to each other in the class.
Most of the time I use the laptop for education to read books on it. But I also use it to practice typing and for playing games.

My parents tell me to use it for educational stuff – they are happy we have it and want me to use it for educational purposes. The programme I am using the most is paint. I lost some of my paper textbooks so now I am using the laptops for my books. It makes no difference to me whether I am reading on the books on the laptops or on paper. But I do prefer the laptop because everything being in one place makes it easy to carry around. It would be easier to read on the laptops if there was some way that we can put the page number in and then go straight to it rather than having to scroll all the way through. If we were doing exercises I would prefer doing exercises with questions on the laptop, this would be better than doing it on paper because then we will not lose our answers like we can when it is on paper. Also we can add notes if doing it on the laptop. But the bad thing about the laptop is that I am worried it will be stolen. So I do not bring the laptop to school with me because I am afraid.

TilahuuAbdissa (male), 15, G7, Atse Noad

*****

For a job when I grow up I would like to be a policeman because there are a lot of thieves and I want to catch them and bring them to the court to be punished. I would also like to be a football player. I really like school and on Saturdays I hope that the teachers may call us in for a tutorial. I like spending time at school and my parents do not want me to be absent from school. They don’t give me work to do at home because they advise me that I should study very hard. In school, the subjects that we study are ok. But with Social Studies all I do is study it word by word so I can do it in the exam but I do not really understand the context – I just remember the words to write. But it is my fault because I don’t read enough on social studies. If there could be videos and games included on the content for social studies on the laptop then I would be very interested and I might drop all the other subjects and just do social studies. I also like reading Chemistry books and I would like to read Ethiopian history, poems and funny stories on the laptops. If we could have anything on the laptop I would like to have a Physics dictionary – for all the Physics words that we can’t find in a normal dictionary. It would also be good to have an English to Amharic dictionary and also to have a condensed version of the textbooks. If we have dictionaries about English and Social Studies and videos about it then this will help me to study more and then it will improve my performance.

However, overall I prefer reading normal textbooks because you can carry them with you all the time and there is no risk that you will break it. Also I know that some people will try to exchange my laptop and swap it for their damaged one. So I always have to take care of it and keep it with me.

At the beginning my neighbour who is a student at AtseNoad had the laptop and so I went to their home and learnt about 10% of the computer. Now that I have my own I know 20% of the computer. When I received it I was very happy. To begin with we focussed on camera, then paint, and then learning to send messages. I learnt from my friends in school and they showed me how I can send messages on the laptop. The best thing about the laptop is that we can learn things from it. If you explore on the laptop and learn new things then you forget your stress. My whole family is very happy that I have the laptop. Every Saturday and Sunday
my friends come to my house and see how the computer is working – they like to touch and see. We have some relatives – every Sunday they come to our house because of the laptop.

In the future I want to join University. Hopefully there will be computers there and I will know how to use it. I also might need to know how to use the computer for a job.

GetachewSisaye (male), 13, G7 Menelik

Teacher stories

We are lucky to have been chosen to have this programme in our school. It is a good thing to introduce this new technology because the students get to use the laptops at this young age and so they will be able to use PCs when they grow up.

It is impossible to use the laptop in the classroom everyday. This is because by the end of the year we have to finish the textbook so we can’t use the laptop all the time. It should be two days per week that we use the laptops, with exercises. The laptop should be a supplement for the curriculum. We would like it if we could have summarised versions of the text books and extra material which is related to the subject. It would be good to include materials on the laptop that show us how we can teach better. To have documentation on every subject on how to teach in a way that the students will understand, something that we can read all the time, every day, to teach us how to teach better. It would also be useful to receive more training so that we can be advanced users. We need to have normal PCs to learn that and we would like them to be able to use email.

The main problem we are facing is that the students are using the XOs in the classroom and not listening to the teachers. We forbid them from bringing them into the classroom but they still are – and they are disrupting things. And now they have them at home so they are not doing their homework. They are playing on the XO instead, with different games, record etc. So we have had parents coming in to complain that their children are not doing their homework because they are playing on the laptops too much. Because of this, it would be good to have the camera and ‘record’ deactivated for school time so that in the classroom they can only use the educational content – this would stop the disruption and would be very nice.

Female Teacher, G3, Menelik

*****

The subject I teach is Amharic. We are using the books on the laptops all of the time in the classroom. But I need more Amharic stories to be included on the laptop, especially children’s stories. We also need extra resources, more than just having the textbooks in Amharic. Having an Amharic dictionary would help the children a lot. Having dictionaries and encyclopaedias would be more helpful for the older children in G7 and G8. It would also be good for geography so that the children can get more information about each topic that they are studying.
Having all this will make the children eager to read more and then they will develop the habit of reading. They enjoy reading on the laptop. The laptop makes things easier for me as a teacher too because the students are eager – when we tell them to do an exercise on the laptop then they are eager. Although it is good the children are using the laptop, learning handwriting is also a must, so the children need to write on paper. Then as they get older it is good for them to type more.

There are problems with the touchpad on my, it is not working properly. I told ECBP that there is a problem but they do not do anything about it.

Things are going well with the programme up to now and we did have enough initial training – but now it is important that we have ongoing support.

Female Teacher, G5 and G6 Amharic.

*****

My students bring the laptops to school every Wednesday and Friday and I make them practice writing and doing games. They know how to write Amharic and English very well. So when the texts are loaded, if we get the training – then we can do it! But sometimes, when we are using the laptops and the normal textbooks together it is problematic. It is best if we teach them normally and then give them examples and assignments from the laptops. Using the laptops for the students to take notes on is very time consuming. This is problematic because G4 has a lot of content in the books and we have to finish it all by the end of the year.

The art of teaching is mostly related to information so any information we can get from the laptop is important to us. We would like you to put any information that you can give to us on to the laptop, everything that will help us with the more advanced approaches to teaching. We also want information on how we should be preparing exercises and assessments on the laptop. In terms of understanding how to use the laptops, for the initial training we are ok, but now we need a day of training how to use the textbooks that are on there. We also need user manuals for every teacher, these are very important. We are all unanimous on the need for more training. Let us get perfect in it and then we will make our students perfect.

We also need normal computers as well and the laptops would be better if the teachers could unlock them ourselves.

About 80% of the children are positive about the laptops because it is a new approach to teaching and to learning. The problem is that the students come from very low backgrounds – their families don’t know about how to use the laptops properly. In my class there are two students whose mother came to see me and said ‘We have problems in our family and I am spending my time getting food for him – I don’t have time to control him with the laptop – keep it here in school’. I told the mother that she should treat it just like other textbooks and pens.

They are children, sometimes they are careless, their friends use it, over time these XO laptops will have problems. One of my students’ laptops is not working because a student from another school damaged it from jealousy. However, there is no chance the laptops will
be stolen. The public in the local area understand that it only works for a month or two before deactivation, also their name is on it so they will never be sold.

We have a problem with trying to convince the children to do work on the laptops first before playing. But you cannot take off all the games because if it was only educational subject matter on there then they will very easily feel bored. The games and ‘record’ are very important – because children have to play. But we have to train them how to use it and how to relate it to their studies.

Male Teacher, G4, Menelik

*****