

Evaluation of OLPC programs globally: a literature review

(Version 2)

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Acronyms and Abbreviations

ACER	Australian Council for Educational Research
G1G1	Give one, get one program
IADB	Inter-American Development Bank
OLPC	One Laptop Per Child
UCA	<i>Un Computador por Alun</i> (Portuguese: One computer per student)
XO	Low cost laptop designed by OLPC project

Note: The authors intend updating this document in six months' time. To help make the review as accurate as possible we would appreciate hearing from any government or other personnel in any country where an evaluation of the OLPC program is being conducted (or is intended to be conducted). We would also welcome further information about the evaluations included here.

In February 2009, a draft version of this document was completed with limited circulation. This is being called Version 1.

In March 2, Version 2 (the current review) was completed with the intention of making this review available more widely among OLPC school communities.

It is anticipated that the next update (Version 3) will appear in October-November 2009.

Executive Summary

This literature review was undertaken by the Australian Council for Educational Research (ACER) with the intention of identifying existing approaches to the evaluation of the OLPC programs globally. It was expected that there would be few examples, partly because the OLPC program is a relatively recent initiative, and this has proved to be the case.

The review indicates that because most of the deployment projects have only started recently, there has been little time to conduct any longitudinal assessments of its impact; the methodology, timing and conduct of the evaluations have been affected by the variations in project implementation models; the findings from existing evaluations are largely anecdotal and positive in nature; and recommendations arising from the evaluations generally relate to training needs and technical matters.

A key issue that have been highlighted in existing evaluations is the need to take into account the cultural and regional setting of the deployment project. Timing constraints and regional locations can also affect the ability of teachers and parents to participate in evaluation activities.

On the basis of the review it is suggested that future OLPC deployment projects embed an evaluation framework at the very beginning of a deployment, preferably at the project design and planning stage. Having an evaluation plan in mind at this stage helps clarify the aims of the evaluation, which as this review found can vary even among stakeholders in the same project, and enables baseline data to be collected so that change and impact can be measured.

Purpose and Scope of Review

The purpose of the literature review was to identify existing approaches to evaluating the impact of OLPC programs. The review was intended to identify what evaluations have been done, who has conducted them, and what the findings have been. It was hoped the review would identify how 'evaluation' is understood in different jurisdictions, the nature of the evidence used to measure impact, and what constitutes 'success'.

The review focuses on countries/jurisdictions that have undertaken deployments of XO computers, and conducted some kind of evaluation of the OLPC program. The focus is more on the approaches and issues surrounding evaluation of the projects than on the wider processes associated with deployment.

Methodology

Information for the review was gathered from three main sources:

- A Factiva news search
- A search of the OLPC wiki site (http://wiki.laptop.org/go/The_OLPC_Wiki)
- Email correspondence with relevant personnel in countries where the OLPC program has been implemented.

The online search of news articles and the OLPC country-specific wiki information yielded a small number of publicly available reports relating to OLPC program monitoring and evaluation (See Attachment).

The online searches provided contact information for relevant experts and government officials who were likely to be knowledgeable about any evaluations that might have been undertaken.

ACER established email contact with these experts and officials and sought information relating to the following questions:

1. Have you done any evaluation yet of the impact of the OLPC program?
2. If you have, what evidence have you gathered and what does it show?
3. Who conducted the evaluation and when?
4. If you have not done an evaluation yet, do you know when one will most likely be done? What kind of evidence are you hoping to collect to show the impact?
5. From your observations (or those of others in your department) what do you see as the main benefits of having the OLPC program in your schools?
6. What have been the main difficulties in introducing the OLPC program in your schools?
7. Are there any other comments you would like to make about evaluating the OLPC program in your schools?

ACER also requested copies of any publicly available reports.

Information from the preliminary literature and email responses was collected and analysed for this report. The list of countries was shortened to include only those with either publicly available material on evaluations and/or those who responded to our emailed queries.

Methodological Issues

A review of the literature highlights a number of issues associated with evaluating the OLPC program.

1. There has been little opportunity to conduct any longitudinal assessments of impact because XO deployments are a relatively recent phenomenon. It is difficult to formally measure impact over several months. One of the aims of the OLPC program is to

create a learning experience that is ongoing rather than a short-lived engagement with the XO technology. It is difficult to know to what extent any changes in the first few months are sustainable or the product of a 'novelty' effect.

2. Of those evaluations that have been conducted, little formal documentation currently exists. Most feedback from the OLPC programs has been anecdotal in nature. In some cases the cultural context can mean that interviewees who might be anxious to please an evaluator provide information in its best light. An implementation study on the Ethiopian deployment, for example, found this to be a persistent factor that resulted in difficulties obtaining honest and accurate feedback.¹
3. Where formal evaluations have been conducted, the findings are not necessarily generalisable owing to the particular circumstances (including the purpose, timing and quality) of the evaluation itself. There is a large variation across OLPC programs in terms of who initiates the evaluation, for what purpose and for what audience. For example, a ministry of education might want to know if the introduction of XO computers in a classroom has led to greater student engagement or performance. A different stakeholder group might want to know more about the issues affecting deployment or infrastructure. It is difficult to build up a global picture of impact across such different agendas and circumstances. Different stakeholder groups hold different expectations of the program and not all evaluations are necessarily focused on measuring educational outcomes.
4. There are difficulties associated with identifying, locating, gaining access to, and communicating electronically with officials in countries where the XOs have been deployed. It is not always clear who is responsible for the evaluation and even where this is apparent, it is not always possible to establish contact.
5. In identifying what works, it is not always clear what criteria are being used to measure success and how conceptions of success differ across jurisdictions. For example, should the OLPC program be evaluated only, or primarily, in terms of its educational benefits (and if so what would be reasonable evidence) or in terms of its broader economic (or other) impact?
6. Little baseline data has been collected which makes it difficult to track change. Additionally, the nature of the relationship between use of the laptops and improved educational outcomes is complex and not necessarily directly causal.

Background

OLPC is a relatively new project. Nicolas Negroponte first announced his idea of a low-cost laptop to be used by children at the World Economic Forum in Davos in 2005. Although this was the culmination of decades' worth of work from Negroponte, as far back as distributing microcomputers to school children in Dakar in 1982, the first XO deployment only took place in February 2007, with mass production beginning in November of that year.

Since then there have been OLPC deployments in over 30 countries.² Current XO deployment projects vary in almost every respect, including how they are set up, funded, managed, implemented, and supported. All projects involve a number of entities, ranging from international donor agencies, national ministries or local departments of education and ICT companies, to Non-Government Organisations or private non-profit foundations.

Current Stages of Deployment

In most of the countries reviewed, the OLPC projects are still in their early days. Many are at the end of their pilot project implementation phase and preparing for wider deployment, while some are still establishing pilot projects. There are exceptions, however, with two Latin American countries having already completed a full round of pilot projects and having starting to implement their country-wide one-to-one computing projects.

¹ Everts et.al. 2008. *Ethiopia Implementation Report, September – December 2007*, Eduvision

² This information comes from to the OLPC official website and the linked OLPC wiki, a collection of web pages that can be easily contributed to and modified by users.

Brazil began trials for its *Um Computador por Alun* (One Computer Per Child) program in early 2007 with five schools. Two of the schools received XOs, two received Intel Classmate laptops and one school received Mobilis laptops. In January 2009, following a public bid, the Brazilian government announced that it would be purchasing Mobilis laptops for country-wide implementation of UCA.

Conversely, Uruguay became the first country to make a government bulk order for XOs when it purchased 10,000 laptops in October 2007, following a public bidding process that also involved Classmate PC. Uruguay is expected to put in another order of 200,000 laptops in 2009 in order to equip every primary school student in the country with an XO laptop.

Evaluations of Existing Projects

Approaches to evaluation, like the nature of the deployment projects themselves, vary greatly partly because of the nature of the entities involved in the initiation and implementation of the projects. In cases where a multinational donor agency or the national ministry of education has been the major funder, countries are more likely to have a comprehensive formal evaluation plan. In other instances the evaluation tends to take a more informal approach, using case studies and stories published on the country community's wiki.

Evaluators and Timing of Evaluation

The choice of evaluator and timing of the study have implications for the methodology chosen and the nature of the responses during data collection. For example, participants might respond differently to an evaluation activity conducted early on in the program compared with one undertaken at a later date.

Evaluations of OLPC projects are often conducted by one or more of the implementing entities. When a donor agency or ministry of education is involved, for example, they usually undertake the formal evaluation. In some instances, external consultants – often from universities – are asked to undertake the evaluation. Informal reporting and evaluation also take place, published via online mediums such as the wiki, blogs or official websites, either complementary to or in place of a formal evaluation process.

At times, different evaluation activities are conducted and reports produced for different purposes and audiences. For example, the monitoring and evaluation of the Ethiopian pilot project is being conducted by the two implementing bodies, ECBP and Eduvision in collaboration with the Universities of Groningen and London. However, Eduvision has also completed and published an implementation report aimed at assessing the impact of the software content they have provided.

The literature, and comments made by those involved in OLPC deployments in various countries, indicates that formal evaluation mechanisms are rarely embedded in the earliest stages of project planning. For example, in Brazil's 2007 trial of three different one-to-one laptop computers in five schools, there was reportedly no funding for a continuous evaluation process.³ At the end of 2008, the Inter-America Development Bank (IADB) revealed plans to fund a project to evaluate the five schools but this did not occur until after the Brazilian government had made a decision on which one-to-one laptop to use in its nationwide implementation.⁴

In another instance in Nepal the formative evaluation was initiated two months after the start of program implementation.⁵ In projects where more informal evaluation activities are carried out, these often start at the beginning of the implementation program but tend to be sporadic and short-lived (or, at least the project's wiki does not get updated until the later stages of the project).

Exceptions to this are those projects that receive funding from, or have had involvement with international donors. In Ethiopia, where a Swiss education company was involved in

³ Marta Dietrich Voelcker, via email, January 2009.

⁴ Ibid.

⁵ Karmacharya, Rabi. 2008. 'Formative Evaluation of OLPC Project Nepal: A Summary'. <http://blog.olenepal.org/index.php/archives/321>

implementation, and in Russia, where a foundation from The Netherlands was involved, evaluation measures were determined early and included in the project plans. The same applied in Haiti, where the IADB provided funding and were involved from the start.

Methodology

The methodology chosen varies across OLPC deployment projects and can be either formal or informal.

In projects where informal evaluation methods have been used, the preferred methodology is case studies and accompanying photos. The reporting method ranges from sporadic to regular uploads of information on to the project's wiki. Projects that use this informal evaluation do so extensively. OLPC programs in Ethiopia, Pakistan, Peru and Russia use their wikis to provide regular updates of the projects' progress, case studies that are often accompanied by photos, and project documents such as implementation plans and presentation materials.

At times an informal evaluation has been conducted in the form of requests for feedback, which are then included in a report or a number of formal reports that are not explicitly evaluation reports. In Papua New Guinea, for example, project personnel visited trial schools five months after the implementation of the trial and sought feedback from teachers. The feedback was then included in a more general report on the challenges and impact of OLPC.⁶

Where formal evaluations have been conducted and written reports produced, the preferred methodology is a combination of quantitative and qualitative data collection. Classroom observations, interviews with teachers, focus group interviews with students, and surveys with students, teachers and parents are widely used. In Nepal, data from school records and school census were also analysed. In Haiti, where UNESCO is involved with the development of a quantitative evaluation of the pre-pilot OLPC project, standardised mathematics and language tests were conducted before and after the project.

In many formal evaluations, the scope of the evaluation was limited to the educational effects of the XOs in school as measured by analysis of school grades and attendance records, feedback from students and teachers, or standardised testing. At times, however, the scope was widened to include the social and psychological effects of the project (as in the Ethiopian evaluation) and to include changes of attitudes and behaviours outside of the classroom (as in the Haitian evaluation). Evaluators have even expressed interest in attitudes towards the project from outside the immediate community surrounding the deployment schools. Results from the evaluation study of the pilot deployment in Uruguay included the recommendation to conduct national public opinion surveys following nation-wide implementation.

Timing of the evaluation also affected the evaluation methodologies chosen. Only projects that included formal evaluation measures right from the start of the project had access to baseline data that would allow comparison with subsequent data. A number of studies raised the issue of whether or not some conditions that are unique to the early stages of the program affect the results. For example, how sustainable is a program, likely to be after the departure of project staff that might have been supplied at the beginning of a project? Most of the formal reports also acknowledge that longitudinal studies are required to properly evaluate the effects of projects of this kind.

Evaluations of Other One-to-One Computing Projects

While the scope of this review did not cover evaluations that have been done on other one-to-one projects, the review revealed some literature on other projects, mainly those competing for the bigger deployment markets, such as the Brazil, Uruguay, India and Russia.

As shown in the Brazilian and Uruguayan examples above, Intel Classmate and Mobilis are two laptop models that are also being offered for one-to-one computing projects. Mobilis is produced by an Indian software company called Encore, while the Classmate laptop is produced by Intel. Both form part of for-profit ventures.

⁶ Leeming, Thomson and Forster, 2009, *Challenges and Impacts of One Laptop Per Child*, The PRIDE Project Pacific Education Series, [<http://www.usp.ac.fj/index.php?id=publications>]

Additionally, there is a possibility of other low-cost laptops being used in one-to-one initiatives as reported in Russia where the EEE laptop from ASUS is being considered for use by a potential private donor. The World Bank's InfoDev has attempted to compile a list of known 'low-cost computing devices and initiatives in the developing world' which, although it came with a disclaimer that it is not exhaustive, came up with more than 50 items.⁷

Between the three major devices mentioned above, Intel appears to have a stronger hold in the United States market, although there have been OLPC deployments in Harlem, New York as well as in South Carolina and Birmingham, Alabama. Intel was also involved with an evaluation effort of one-to-one initiatives in secondary schools in the United States, along with University of Alabama, and Tech&Learning.

So far, the only studies that have included an element of comparison between OLPC and other educational ICT projects have been the evaluation studies in Peru, where there were already shared computers in labs, and of the school in Harlem, New York, where the teachers already had 'laptop carts' that are rotated. None of the formal reports included in this review, however, have compared OLPC with other one-to-one computing projects. The report that will result from the IADB's study of the Brazilian trials of all three laptops might prove to be an important source of information in comparing their benefits and points of difference between them.

Conclusion

Several conclusions can be drawn from the review of evaluations carried out on OLPC projects around the world. The most obvious one is that because most of the deployment projects have only started recently, there has been little time to conduct any longitudinal assessments of its impact. Because of this as well, little formal documentation currently exists on evaluations of recent projects and the ones that do exist vary greatly.

The evaluations are affected by variations in project implementation models. A more informal approach, often using the OLPC wiki, is preferred by deployments run by local foundations or organisations, often along with representatives from the OLPC team, whereas projects that involve international entities – either multilateral agencies such as the IADB or individual organisations based in countries other than the deployment country – favour more formal evaluation mechanisms.

The results of existing evaluations tend to be positive, highlighting the educational impacts on students, effects on teacher-student relations, and impact on the wider community. Recommendations arising from these evaluations often relate to training needs and technical matters, such as charging and network support.

Methodological issues highlighted in the review include the need to build evaluation into the planning and design stage of the program, and to ensure that the evaluation is conducted in culturally appropriate ways. Data collection also needs to take account the availability of teachers and parents in planning the timing and types of evaluation activities to be done.

Below is an Attachment that summarises the key elements of the evaluations that are known to have been undertaken of the OLPC programs globally. These and other evaluations will be monitored over the next 12 months to build up our understanding of what is being done, by whom, for what purpose, and with what results.

⁷ Trucano, Michael. 2008. 'Quick guide to low-cost computing devices and initiatives for the developing world'. An *infoDev* briefing sheet. Washington, DC: *infoDev* / World Bank. <http://www.infodev.org/en/Publication.107.html>

Country	Brief description of OLPC project	Funding/ implementing institution	Who conducted the evaluation (if any) and when	Methodology	Impact identified	Issues	Source(s)
Brazil	UCA (<i>Um Computador por Alun</i>): five trial schools in 2007. Two schools used XOs, two Classmates (Intel) and one used Mobilis (Ncore Software, India) In January 2009, following a public bid, the government announced that it will use Mobilis laptops for a wider implementation of 150,000 laptops in 300 schools.	Funding from Brazilian Ministry of Education. Implementation by Fundacao Pensamento Digital (FCP)	No formal evaluation of pilot. There was no funding. From 2009, IADB will commence funding for research in the 5 original trial schools which will be conducted by IADB and Knowledge Partnership Korea.	The IADB-funded evaluation will be a year-long project to document cases and experiences in all five pilots.	Report not yet available	Report not yet available	Wiki; Marta Dietrich Voelcker, FPD (via email)
Ethiopia	Following a trial of 60 laptops in Addis Ababa, 5000 laptops were distributed in October/November 2008 to four schools: two rural and two in Addis Ababa. Laptops are not to be taken home by students.	Laptops from G1G1, implementation by the Ethiopian Engineering and Capacity Building Program (ECBP, under its on.e project) and Eduvision (a Swiss ICT/education company)	M&E conducted by ECBP, Eduvision, University of Groningen and University of London Ongoing since the preparatory phase of the project. The first report is due in March 2009 at the end of the first 6 months. Eduvision also compiled an evaluation report, although the focus is limited to the content that they provided.	Classroom observations, interviews, focus groups, baseline tests and questionnaires Methods aimed at getting feedback on both the primary (educational) effects and secondary (social and psychological) consequences of the laptops	Report not yet available (to be published in May 2009 for the e-learning Africa conference in Senegal)	Report not yet available	Wiki; Márton Koscev, on.e e-business solutions (via email)

Country	Brief description of OLPC project	Funding/ implementing institution	Who conducted the evaluation (if any) and when	Methodology	Impact identified	Issues	Source(s)
Haiti	<p>Around 100 XO's deployed in one school as a pre-pilot project</p> <p>Larger pilot expected to commence in April 2009</p>	Funding from IADB	<p>IADB and Columbia Teachers' College conducted qualitative evaluation on pre-pilot project</p> <p>UNESCO's Regional Office on Education in Latin America and the Caribbean will conduct standardised mathematics and language tests before and after the pilot project to evaluate its performance from a quantitative standpoint.</p>	<p>Pre-pilot evaluation used qualitative methods only (such as observation of pedagogical practices).</p> <p>For the pilot, qualitative evaluation will include observation of classroom practices to gauge whether one-to-one computing affects attitudes and behaviours. The pilot will also examine how families value education, the use of laptops at home, and the perceived educational progress of students.</p>	<p>Pre-pilot evaluation report will be available early 2009 (on IADB website).</p> <p>UNESCO pilot evaluation report will be due 1.5-2 years from implementation.</p>	Report not yet available	<p>Wiki; <i>Plan of Operation, Haiti Pilot of the One Laptop Per Child Model</i> (NOT FOR PUBLIC USE, year unknown); Emma Naslund-Hadley, Project Team Leader, IADB (via email)</p>
Mongolia	<p>As the first beneficiary of the 2007 G1G1 program, 1,000 XO's arrived in Mongolia in January 2008. 9,000 more arrived in June 2008.</p>	<p>Laptops from G1G1 program</p> <p>A team from OLPC were involved with the implementation on the ground, including a group of OLPC volunteers to translate the XO interface.</p>	<p>Evaluation reports were written for internal purposes, focusing on the transition of the OLPC team's handover to an entirely local team of both governments and non-government entities.</p> <p>Brief updates on project's progress and photos are on OLPC wiki.</p>	<p>The OLPC team is finalising a template for assessment, to be shared with the local groups overseeing the project, to assist them in assessing their own work.</p> <p>Elements include formal and non-formal metrics: grades, community engagement, online networking.</p>	<p>Observed sense of pride and ownership in students resulted in better attendance and participation in the classroom. Behaviour improvement of students previously considered troubled.</p>	Report available internally.	<p>Wiki; Elana Langer, OLPC Learning Consultant (via email)</p>

Country	Brief description of OLPC project	Funding/ implementing institution	Who conducted the evaluation (if any) and when	Methodology	Impact identified	Issues	Source(s)
Nepal	In April 2008, XO laptops were distributed to all 135 students in grades 2 and 6 at two secondary schools in a district in Nepal.	Pilot implemented by Open Learning Exchange (OLE) Nepal - a non-profit organisation. Nepalese Government has a three-tier committee to implement wider OLPC program under the Ministry of Education: Steering Committee, Coordination Committee and Task Force.	Formative evaluation conducted by Uttam Sharma, doctoral student at the University of Minnesota Department of Applied Economics. Initiated 2 months after start of program implementation	Surveys of teachers, head-teachers, students and their family, and some school management; as well as data from school records, school census, and discussions with OLE Nepal officials and meeting with teachers.	Increased student interaction through student-centered approach; increased curiosity and eagerness to learn; developed cooperative spirit as students learn to use laptops together; teacher-student relationship became more interactive and challenging, breaking down traditional lecture mode; teachers saw great promise in reducing disparity between private and public schools.	Teacher workload significantly increased. Differences in the two pilot schools due to external pre-existing reasons raise the question of whether some schools will need more preparatory activities than others. The evaluator found it difficult to measure quantitatively the positive impact of XOs on students' academic performance mentioned by teachers and parents.	Wiki; <i>Formative Evaluation of OLPC Project Nepal: A Summary</i> (2008); Uttam Sharma (via email).
Pakistan	Pilot project launched in March 2008, at a school attended by about 150 students, around 100 of whom are Afghan refugees. 29 XOs were given to select students in Grades 3 & 5. A second pilot was launched in May 2008 in a rural school, with 15 laptops deployed to every student in Grade 4 and 10 additional ones allocated to the school's library.	OLPC Pakistan currently led by Dr Habib Khan, OLPC Director of Education South & Central Asia, Throughout 2008 Dr Khan made presentations to the Ministry of Education Pakistan and Education Department of Federally Administered Tribal Areas (FATA) on OLPC and the Cost Simulation Model he designed.	Conducted internally	Currently in formative phase of evaluation, applying case-study approach Case study reports uploaded on to OLPC Pakistan wiki	Report not yet available	Report not yet available	Wiki; Dr Habib Khan, Director of Education, South & Central Asia, OLPC Pakistan

Country	Brief description of OLPC project	Funding/ implementing institution	Who conducted the evaluation (if any) and when	Methodology	Impact identified	Issues	Source(s)
Peru	<p>Pilot project deployed laptops to all 46 students in a primary school in Arahua in June 2007.</p> <p>The school already has 5 computers and an internet connection, provided by the Ministry of Education's Huascarán Program.</p> <p>In January 2008, over 40,000 XOs were deployed to other areas in Peru.</p>	<p>Public funds used.</p> <p>OLPC Arahua pilot team consisted of consultants from General Directorate of Educational Technologies (DIGETE) Ministry of Education.</p>	<p>The MOE team produced a project report, which documents brief observations on the implementation.</p> <p>An OLPC Learning Consultant wrote progress and case study reports on OLPC Arahua wiki.</p>	<p>Observation; interviews with teachers and school staff</p> <p>Reporting on progress and a number of case study reports uploaded on to OLPC Arahua wiki.</p> <p>An article in the wiki mentions that the MOE is running short term pre- and post- pilot studies with an OLPC group only.</p>	<p>School staff reported decline in absenteeism; teachers reported behavioural change, with students showing more positive attitude towards their peers and class activities.</p>	<p>To resolve server issues the implementation team had to travel to the centre of town to make long distance calls to the technical support team, which raised questions how the students/school would resolve technical issues.</p>	<p>Wiki; <i>Pilot Program "One Laptop Per Child"</i> (2007)</p>

Country	Brief description of OLPC project	Funding/ implementing institution	Who conducted the evaluation (if any) and when	Methodology	Impact identified	Issues	Source(s)
Russia	Pilot test project involved the deployment of 15 XO's in Pskov and 35 XO's at a secondary school for visually impaired students (with Text2Speech software) and an ecological camp at Nizhy Novgorod. Commenced in August 2008.	Funding from OLPC The Netherlands (Making Miles for Millennium). Implementation by MMM along with OLPC Russia, with translators, developers and educators from Nizhy Novgorod Pedagogical University and School for Visually Impaired Children. They intend targeting the Ministry of Education, which has announced its intention of supplying a computer to every child, and a prominent Russian tycoon who has plans for buying 1 million laptops for Russian schools (although his foundation is reportedly focusing on ASUS EEE).	Two evaluation reports were included as part of the project deliverables, one on Nizhy Novgorod on the added value of the XO for students (to be done by Foundation MMM), and another Pskov/Nizhy Novgorod with a go/no go for larger scale development (to be done by the Centre for Distance Learning Education, Nizhy Novgorod Pedagogical University). In the project plan, the evaluations were scheduled for a 10-day period in the one-year implementation timeline.	The evaluation used a 4P (Power, Performance, Price, Portability), 4C (Communication, Collaboration, Creation, Content), 4S (Safety, Sturdiness, Serviceability, Storage) approach developed by a writer at olpcnews.com The findings were published in a series in the Russian educational press.	Compared to other mobile pc brands used around Russia, XO's were found to be more power-efficient and cost-efficient (with bulk-purchases) although their performance is at times slower. Sturdiness (after being exposed to the environmental elements at the summer camp) was found to be one of their strongest aspects. Important uses of the XO's in the camps included creative writing, drawing, reading e-books in pdf formats and using software to develop their own content.	Financial concern that the actual cost of purchasing 50 XO's is about \$500 each, including fees and taxes Difficulty sourcing replacements for parts and accessing technical support	Wiki; <i>Project Initiation Document (concept) Introduction of XO laptops for (visual impaired) school students in Pskov and Nizhy Novgorod, Russia</i> (2008); Boris Yarmakhov (OLPC Russia coordinator) via email

Country	Brief description of OLPC project	Funding/ implementing institution	Who conducted the evaluation (if any) and when	Methodology	Impact identified	Issues	Source(s)
Rwanda	<p>Trial project was run in October/November 2007 in Primary Five class of Rwamagana B Primary School. This trial involved 96 P5 pupils and 4 teachers and about 106 laptops were tried.</p> <p>Pilot project of 5000 laptops deployed in October 2008.</p>	Laptops from G1G1, implemented by Ministry of Education	Conducted by Justin Nsengiyumya (Secretary General of MINEDUC) and Richard Niyonkuru (M&E Advisor to Ministry's ICT Department).	Survey based, aimed at establishing whether students who received laptops 'benefited from the computer' and to assess whether the laptops in any way 'uplifted their learning'	Students have benefited, 'children appreciated education content', learnt how to interact with the computer, surf the internet, and get maps and scientific diagrams.	Students are learning faster than teachers.	http://allafrica.com/stories/printable/200808290115.html
Sri Lanka	Pilot project involving 1000 XO's deployed in 9 primary schools in October 2008.	<p>OLPC Sri Lanka was established and is run by prominent business people and former high ranking public officials.</p> <p>Pilot project funded and implemented by OLPC Sri Lanka, the Ministry of Education, and the World Bank.</p>	Evaluation of the project will be conducted by the Ministry of Education and the World Bank - no other information available.	Report not yet available.	Report not yet available.	Report not yet available.	Wiki; OLPC Sri Lanka website [http://www.olpc.lk] accessed 19/01/2009

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Uruguay	<p>Ceibal Project launched by the Government of Uruguay in December 2006.</p> <p>The pilot project took place between February 2007 - March 2008 and deployed 150 laptops.</p> <p>In October 2007, following a bidding process involving OLPC and Intel Classmate, Uruguay became the first country to place a government bulk order - of 10,000. Another order of 200,000 is expected in 2009 to equip every primary school student with an XO.</p>	Pilot project implemented by Laboratorio Tecnológico de Uruguay, in collaboration with Canada's International Development Research Centre	Evaluation conducted internally (by Sylvia Gonzales Mujica, a project manager at LaTU who also wrote an interim report)	Literature review; interviews with informants; surveys of teachers, students and parents at pilot school and at a control school; direct classroom observation at pilot school	Widely positive reaction from students, teachers and parents; teachers' and parents' active involvement was encouraged; many started taking computer courses	<p>Recommended more consultation with teachers, as there were some resistance from teachers at the pilot school over lack of training; lack of national content.</p> <p>Report recommended use of collected survey data as baseline data for wider deployment; evaluate different behaviours, such as responsiveness or rejection among students, teachers, parents and wider community; outcomes of teacher training; yearly sampling and a national public opinion survey.</p>	<p>Wiki; <i>OLPC - Analysis of the implementation of first pilot Project number: 104261-002</i> (2008) - report on IDRC website [http://www.idrc.ca/en/ev-111131-201-1-DO_TOPIC.html] accessed 19/01/2009</p>

Country	Brief description of OLPC project	Funding/ implementing institution	Who conducted the evaluation (if any) and when	Methodology	Impact identified	Issues	Source(s)
USA (Harlem, NY)	<p>Pilot school gave a laptop to each of the 24 sixth grade students at a school in Harlem, to be used specifically for the final three units of a year-long Teaching Matters literacy curriculum, although students are allowed to use them in other classes if approved by teachers.</p> <p>The school already had 'laptop carts' that are wheeled into classrooms on an as-needed basis. Teachers take turns using them. At times the laptops do not all work so students have to share.</p>	Teaching Matters (content provider - <i>Writing Matters</i> , a 'non profit professional development organisation that partners with educators to improve public schools') in collaboration with NYC Department of Education	Conducted by Dr Susan Lowes (Director, Research and Evaluation) and Cyrus Luch (Research Assistant) from the Institute of Learning Technologies, Teachers College Columbia University	Post-implementation student surveys; pre- and post-implementation parent surveys; focus groups with small groups of students (mid-semester and towards end of semester); interviews with teachers and Teaching Matters staff at school.	Students used XOs more than other laptops, therefore spent more time doing research, wrote more, revised more and published more; students took much more responsibility for the XOs than the old laptops; the laptops were cost-effective.	How much of the pilot's success was due to the fact that the pilot school was chosen because of its conducive setting and the manageable size of the pilot? Will the effects be replicable?	<i>Evaluation of the Teaching Matters One Laptop Per Child (XO) Pilot at Kappa IV (2008).</i>