

# Volunteers Report - Samoa olpc deployments visit

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## Abstract

In May 2010 olpc laptops were deployed into two primary schools on Savaii. This report describes the experiences and work carried out by two volunteers who visited in August 2010. The two primary schools were found to be very different. Paia Primary School is isolated with students from one village, has IT literate teachers and allows the students to take the laptops home. Paia students are confident with the laptop and willing to accept direction due to their unfettered access to the laptop at home. Laumoli Primary School is on the coast in a popular tourist area and services several villages. The teachers and students are less confident and able with the laptops. Students are not allowed to take the laptops home and are less willing to take direction when using the laptop. The laptop was not integrated into the curriculum at either school, with ICT class being held after normal school hours.

The two volunteers observed the progress of the deployment, upgraded the laptops, set up a School Server and access points at each school, allowing students to connect to the School Server from their classrooms. Training sessions were undertaken with teachers and students to develop capability with the laptop, School Server and network.

Recommendations for the future include integrating use of the laptop into the curriculum, and professional development for teachers. Supporting documentation will be made available on the [olpc wiki](#) for future reference.

## Prologue

The May 2010 deployment consisted of 48 XO-1.0 laptops to Laumoli Primary School children plus additional laptops to teachers and 27 XO-1.0 laptops to Paia Primary school children plus additional laptops to teachers. These schools are located on Savaii Island. Information is available on [wiki.laptop.org/go/OLPC\\_Samoa](http://wiki.laptop.org/go/OLPC_Samoa) including progress of the pilot prior to this visit. Some initial training had been carried out by MESC IT staff with teachers and students in each school.

This report has been written by Tom Parker and Tabitha Roder who carried out this trip as self funded volunteers from New Zealand. They do not speak as employees of the olpc foundation, but as active volunteers in the wider olpc community, Tabitha with over two years experience and Tom with approximately a year and a half experience. Tabitha works in tertiary education as an Academic Advisor in the field of eLearning. Tom is a physicist working in the IT Industry as a software developer.

The volunteers were assisted in this deployment visit by MESC IT Support staff, Taieseaa (Tai) Fiti Petaia and Asi Puaina Fui.

# Table of Contents

<u>Volunteers Report - Samoa olpc deployments visit.....</u>	<u>1</u>
<u>Abstract.....</u>	<u>1</u>
<u>Prologue.....</u>	<u>1</u>
<u>Table of Contents.....</u>	<u>2</u>
<u>Initial State.....</u>	<u>3</u>
<u>Laumoli observations.....</u>	<u>3</u>
<u>Paia observations.....</u>	<u>4</u>
<u>General notes from observations.....</u>	<u>4</u>
<u>Approach.....</u>	<u>5</u>
<u>olpc Principles.....</u>	<u>5</u>
<u>Theories on teaching and learning.....</u>	<u>6</u>
<u>Laptop build.....</u>	<u>8</u>
<u>Samoa Language.....</u>	<u>8</u>
<u>School Server.....</u>	<u>9</u>
<u>Laumoli School Server.....</u>	<u>9</u>
<u>Paia School Server.....</u>	<u>9</u>
<u>Training.....</u>	<u>11</u>
<u>Management of Laptops.....</u>	<u>13</u>
<u>Spares and maintenance.....</u>	<u>13</u>
<u>Internet access at the schools.....</u>	<u>13</u>
<u>Recommendations.....</u>	<u>14</u>
<u>Curriculum integration .....</u>	<u>14</u>
<u>Future training on site.....</u>	<u>14</u>
<u>Training for interested MESC staff.....</u>	<u>15</u>
<u>Dedicated support.....</u>	<u>15</u>
<u>Upgrade to the “final” Dextrose release.....</u>	<u>16</u>
<u>Update activities on the School Server.....</u>	<u>16</u>
<u>Shift Paia external wifi higher and replace cable.....</u>	<u>16</u>
<u>Power points in the classrooms, extension cables and multiboxes.....</u>	<u>16</u>
<u>General comments.....</u>	<u>17</u>
<u>Other support for MESC.....</u>	<u>17</u>
<u>Documents to support this report.....</u>	<u>18</u>
<u>Documents written.....</u>	<u>18</u>
<u>Documents to be added .....</u>	<u>18</u>

## Initial State

On arrival we were given information on perceived issues: laptops freezing, no sound & battery issues. Few details had been collected from the users about these issues and the laptops associated with the perceived issues were not labeled. We investigated these issues as best we could and believed the freezing was due to users starting too many activities as we found no fault with laptops. One laptop had been returned to MESC with no sound, we suggested reflashing the laptop and Tai resolved this issue. We found the laptops were running build 767, not 802 as initially expected.

## Laumoli observations

We visited Laumoli school and observed students using laptops. This confirmed the laptops freeze after starting too many activities exhausting the available memory -- they had not learned how to “stop” activities. Students had also not learned to “share” activities between laptops so as to learn together collaboratively.



The touchpad was causing a lot of problems and we taught them how to reset it. The art of maneuvering had not been mastered by teacher or student and they were not aware of drag and drop.

There was no evidence of saving and naming files in the journal, they were not using the list view to manage favourite activities. There was no personalisation of the laptops.

We asked the students to show us their favourite activities and they opened Write, Speak, Record, Maze, and Tamtam Mini. They knew how to move between activities and the home view and had discovered the demonstration programmes hidden inside Scratch. They were enthusiastic and competent taking photos with Record. They had developed strategies for completing complex Mazes in the Maze activity.



We established the curriculum topics taught so we can consider these in our training. Currently the laptop is not integrated into the curriculum but taught as a class on its own after lunch. A teacher identified teaching goals as learn the keys, the touchpad and how to open programmes. The teacher had not yet considered how the laptop supports curriculum goals. Children were not taking the laptops home. Only year 5 and 6 have laptops which does not match the information on the Samoa wiki page. Students were extremely excited by laptops and willing to stay after school to learn more. We were advised that the olpc laptops have increased attendance. Teachers, parents/guardians and students were all very friendly and enthusiastic about the olpc pilot; we were particularly impressed by the parents/guardians dedication to the students learning not only with regard to the laptop but also in reading, and the teachers dedication in staying late to charge all the laptops and having school on Saturday.

## Paia observations

We found similar competencies as well as gaps in knowledge of the XO functionality at Paia, except the students were more confident on the laptops and had learned about saving and the Journal. Investigating, we found that some teachers in this school had used computers at University and that these children were taking the laptops home to practice. They had not learned “stop” or “share” consistently but knew sharing with chat. They also experienced touchpad issues and had not yet mastered “drag and drop”. We taught how to reset the touchpad.



Year 4, 5 and 6 students have laptops and were very excited and willing to stay after school to spend time with us. Paia appear to be running laptop classes after lunch, rather than integrating ICT into the existing school curriculum. There is homework set every day which the students showed us they complete and the teachers reported no problems with the laptops going home. We were advised that the introduction of olpc laptops have increased student attendance rates. Teachers, parents/guardians and students were all very friendly, enthusiastic and supportive of the olpc pilot.



## General notes from observations

We include this general note on the conditions of the schools: Paia classrooms appear to be better resourced than Laumoli classrooms. All Paia classrooms had posters covering all available space on the walls, both printed professional posters to aid learning, but also just as many posters created by the teachers. Paia school had a library of physical books that students could read, as well as learning games in boxes on the teachers desks. At Laumoli school the classrooms were almost bare walled with few posters, holes in the blackboards, and there was no library of books for the students to read. A Laumoli teacher showed us the 2 books she used for her class for the year. We suspect the greater resources at Paia support the teachers in teaching the entire curriculum. The breadth of the reading is evident in the Paia students individual writing styles. While Paia had no computers prior to the olpc deployment, they have a higher level of computer literacy which we understand is due to two teachers having used computers at University. Laumoli had one working PC in addition to the olpc laptops, but seemed to have no experience using it. We are not able to accurately judge the differences fairly as foreigners unfamiliar with the Samoan curriculum, but wanted to bring these observations to the attention of MESC for consideration of how they can assist Laumoli further. We note that the toilets at both schools had no toilet paper or running water.

## Approach

We alternated days between schools to allow time for staff and students to practice what they learned with us. During the visits we buddied up with the two IT Support staff who are responsible for supporting the deployments and provided as much training for them as we could fit into the available time.

We extended an offer to meet with parents so they knew who we were and were given opportunities to ask us questions. This offer was accepted and was well received. We requested permission from parents, teachers and students to take photos during the visits.

We always asked students permission before changing anything on their laptops and tried to ensure they understood what we were doing. We tried to show teachers and the IT Support how we fixed things so they could continue after we left.

## olpc Principles

Samoa are not following the olpc first principle of child ownership during this pilot programme. All laptops have been branded with MESC asset numbers and “named” with this number, not the owner’s name. The plan is to redistribute the laptops to new students each year, keeping the laptops within years 4, 5 and 6 of the schools. Quoting olpc’s first principle:

*OLPC has created the XO laptop to be low cost, robust and powerful, beautiful and friendly. It was designed for elementary school children, the first of its kind.*

*A laptop can be transformed into a mobile school: a portable learning and teaching environment. A connected laptop is more than a tool. It is a new human environment of a digital kind. An essential aspect of OLPC is the free use of the laptop at home, where the child and the family together can greatly increase the practice time normally available at a school lab or library.*

*The ownership of the XO is a basic right, coupled with new duties and responsibilities: including protecting, caring for, and sharing this creative environment.*

The principles of low ages has been followed in that these students are studying at years 4 to 6 so are within the recommended age bracket. This is a pilot programme so does not currently extend to new classes each year.

*The XO is designed for the use of children ages 6 to 12 — covering the years of elementary school — but nothing precludes its use earlier or later in life. Children do not need to know how to write or read to enjoy and learn with an XO. Playing is the basis of human learning, and the digital activities on an XO help with acquisition of reading and writing.*

*Every year a new class of students will be incorporated into the program. The assessment of the OLPC program should be intrinsic to each class, and every student will have an individual portfolio or journal with the history of his or her learning paths in the many disciplines at school. Small children with learning, motor or sensory disabilities may use the computer as a prosthesis to read, write, calculate, and communicate.*

With regards to the principle of saturation, Samoa have deployed the laptops for use with every child in the classes at year 5 and 6 at Laumoli Primary School, and every child in the classes at years 4, 5 and 6 at Paia Primary School. This is providing digital saturation to these classes and as a pilot for this country.

*OLPC is committed to elementary education in developing countries. To attain this objective we aim to reach “digital saturation” in a given population. The key point is to choose the best scale in each circumstance. It can be a country, a region, a municipality or a village, in which every child and teacher will own a connected laptop.*

*As with vaccinations, digital saturation implies a commitment to maintaining these tools as part of primary education over time. With it, the whole community becomes responsible for this focus on shared education, and the children receive support from the many institutions, individuals and groups around them. Universal connectivity helps these different communities grow together and expand in many directions, in both time and space. Over time, the education network becomes solid and robust, without a digital divide.*

With regards to the principle of connection, inadequate training in the early stages of the deployment resulted in the teachers and students not having enough understanding of how to use the neighbourhood view to share and collaborate. Our training during this visit has raised awareness of this facility and included practice time for teachers and students to learn about connection. The addition of the School Server further extends the connection teachers and students have available.

*The XO has been designed to provide an engaging wireless network. The laptops are connected to others nearby automatically. Children in the neighborhood are permanently connected to chat, sharing information on the local network or web, making music together, editing texts, or using collaborative games.*

*The laptop can be charged by solar or mechanical power, or through special bulk-chargers at school. The unique XO display allows the use of the laptop under a bright sun. All of this makes it easy for children in a community to connect to one another almost anywhere.*

*This connectivity will be as ubiquitous as a formal or informal learning environment permits. We propose a new kind of school, an "expanded school" which grows beyond the walls of the classroom. Last but not least, this connectivity ensures a dialogue among generations, nations and cultures. The OLPC network will speak every language.*

Free and open source software is being used successfully in these deployments. The laptops are on build os300py and the server is running XS 0.6.

*All children are learners and teachers, and this spirit of collaboration is amplified by free and open source tools.*

*A child with an XO is not a passive consumer of knowledge, but an active participant in a learning community. As children grow and pursue new ideas, their software, content, resources, and tools should be able to grow with them. The global nature of OLPC requires locally-driven growth, driven in part by the children themselves. Each child with an XO can leverage the learning of other children. They can teach each other, share ideas, and support each other's growth.*

*There is no inherent external dependency in being able to localize software into their language, fix the software to remove bugs, and repurpose the software to fit their needs. Nor is there any restriction in regard to redistribution; OLPC cannot know and should not control how the tools we create will be repurposed in the future.*

*OLPC's goals require a world of great software and content, both open and proprietary. Children need the chance to choose from all of it. In the context of learning, knowledge should be free. Further, every child has something to contribute; we need a free and open framework that supports the human need to express and share.*

## Theories on teaching and learning

We include here brief information from the olpc wiki on the theories of teaching and learning which we believe were used to inform the design of the olpc laptop and the Sugar software for its intended use as a specifically learning oriented tool. This information we hope helps the reader understand the approach we used in our own classroom behaviour.

**Constructionism** is a philosophy of education in which children learn by doing and making in a public, guided, collaborative process including feedback from peers, not just from teachers. They explore and discover instead of being force fed information, or subjected to a regime of social control as in the Prussian system adopted in the US and elsewhere, sometimes called [Instructionism](#). Constructionist guidance has to be informed by a knowledge of what there is to explore and discover, including our ignorance, and of a variety of approaches that can be used for children at different developmental levels with various degrees of preparation.

More on this topic can be found by exploring Google using keywords such as "constructionism", "education", "philosophy". See for instance [openworldlearning](#), [Seymour Papert's website](#), <http://www.papert.org>, and the wikipedia article on [constructionist learning](#). Constructionism is implemented on the OLPC XO in the form of [collaborative discovery](#).

"I hear and I forget. I see and I remember. I do and I understand." - Attributed to Confucius.

Constructionism is built on the foundation of [Constructivism](#), the theory of childhood learning created by [Jean Piaget](#), [Lev Vygotsky](#), and many others.

The olpc wiki recommends the following books and notes:

[\*The Language and Thought of the Child\*](#) (Piaget, 1923)

[\*Mindstorms: Children, Computers, and Powerful Ideas\*](#) (Papert, En, '94)

[\*The Children's Machine: Rethinking School in the Age of the Computer\*](#) (Papert, En, '94)

[\*Constructionism\*](#) (Harel and Papert, En, '91). [Full text](#) of Chapter 1, *Situating Constructionism*.

*Jaillissement de l'esprit* and *L'enfant et la machine à connaître* (Papert, Fr)

*Being Digital* (Negroponte, En, '96)

We also recommend reading Marvin Minsky's essays, particularly "Thinking about Thinking about Ways to Think". Minsky's essays can be found on the olpc wiki:

[http://wiki.laptop.org/go/Marvin\\_Minsky\\_essays](http://wiki.laptop.org/go/Marvin_Minsky_essays)

## Laptop build

The laptops were deployed in Samoa with build 767 (aka 8.2.0) which is almost three years old. We understand SPC had advised Samoa to update to build 802 (aka 8.2.1) before distributing the laptops to the schools but this had not occurred. Build 767 did not allow the laptops to connect to the School Server and there has been a vast number of significant developments since this build. We considered the current available builds for the XO-1.0 laptop and discussed some options with the teachers in the schools.

We recommended updating to an unsigned build that is being prepared for Paraguay & Uruguay where there are larger numbers of XO-1.0 laptops deployed. This build was named os300py but is now commonly known as “Dextrose”. It allows the laptops to connect to the School Server, gives new features and is relatively stable. We explained to the teachers that this is a very new build and although it will fix some bugs with the old software it will have new bugs that are yet to be identified, however the benefits are significant, including easier updating and fixing. We explained to the teachers that the update would wipe the Journal. The teachers agreed to the update. We explained to the students also and then asked the students permission to update their laptops and confirmed their agreement.

At Laumoli we unlocked the laptops and carried out the upgrade immediately. At Paia we held off the upgrade until we had confirmed we could save their Journal as these students had been saving work to their Journal actively. We were able to create a programme that would backup their work and restore it after the upgrade.

## Samoa Language

Before coming to Samoa we requested Samoan be enabled in Pootle, the translation tool used by olpc. Translators were identified in New Zealand and translation of the most commonly seen strings was carried out. Thank you to Lance Laulala, Pastor Solia Tautai, and Seugoga Fololi Lologa-losua for their assistance in translating Sugar for Samoa.

We wrote a script to install the Samoan translations which was run as part of the upgrade procedure. After gaining consent from the students and teachers, as part of the upgrade we installed Samoan in every laptop we encountered and we left instructions for the few remaining laptops with MESC. The user can choose which language they prefer to use on their laptop and can change at any time in their settings.

This is not a full translation of Sugar but can be continued locally if desired. We have provided the IT support team information on continuing translation. Documentation for how to update the translations in the laptops will be added to the [olpc Samoa wiki page](#).



# School Server

Australian Youth Trust of the Commonwealth Day Committee of NSW provided a donation which we used some of to purchase 2 EeeBox 1021 servers, 6 Ubiquiti Networks “Picostation 2” access points and 2 ethernet switches. We pre-loaded and tested the School Server software and installed a library of resources on these servers before travelling to Samoa. Setup details are on the [olpc Samoa wiki page](#).

The School Server provides an automatic backup facility to safeguard student’s work, a web server for distributing additional activities, library content and a Moodle server. Moodle is a learning management system and provides the GUI for the laptops connected to the School Server. Using Moodle, the teachers can design and deliver courses for the students. Moodle has already been translated to Samoan and we have set the default language to Samoan at both schools.

In the library of resources we included a selection of e-books, Schools Wikipedia, a “Britain CD” from MESC, and extra activities to run on the laptops. When connected to the school network, the activities and e-books can be downloaded and stored on the laptop, making them available to students when they are not at school. The Schools Wikipedia and Britain CD are only available when connected to the school network.

## Laumoli School Server

The school carpenters screwed the School Server to a wall in a back room of the principle’s office. We mounted the wifi access points in the year 5 classroom, the year 6 classroom, and the classroom they use as a computer lab and ran ethernet cable back to the office. We connected the office computer to the network, giving it access to the same resources as the laptops. Laptops could access the server via wifi throughout the whole school, but the wifi network did not perform well when every laptop was in the same room -- they overload a single access point. Performance was good when each class used a different access point.



## Paia School Server

The School Server was located on a high shelf in a back room of the teachers office. The wifi access points were mounted in the Year 3 & 4 classroom and the Year 5 & 6 classroom and half way up the flag pole in front of the school. With the smaller number of laptops and no dedicated computer lab, we found we could cover the entire school with 2 access points. Coverage outside was poor due to concrete external walls, so we placed the 3rd access point on the flag pole. This provided good coverage to the school grounds and into perhaps half the village. We suggested the students make a map of the village and show where the network works. We were able to use the School Server from our host’s house, but found the network worked better on his roof. At the school we only had a small ladder, so we recommend finding a taller ladder and moving the access point to the top of the pole for better coverage. We did not have any “outdoor” ethernet cable and expect the “indoor” cable we used to fail due to sun damage; this cable should be replaced.



We must give our sincere thanks to our MESC colleagues Tai & Asi for their help setting up the network; They did the cable pulling and roof climbing and proved able partners setting up the equipment.

# Training

We worked with teachers and students to learn “stop”. Teachers need to continue reminding students to “stop” as this will take some time to learn. The new build gives students a new step that lets them name the work they have finished and give it a description and tags for their Journal. Using this new “name this activity” window also requires further practice for students to become competent.



We demonstrated resetting the touchpad and helped the students use the reset. More experience with the touchpad will reduce the need to reset it as they learn to use one finger at a time and only use the fingertip rather than laying large parts of their finger on the touchpad. We did not teach them to change from capacitive to resistive touchpad modes as we felt we were already overloading them with information, a future training session could introduce this.

We taught how to share activities (in addition to chat) such as Memorize, Record and Write. Students will need to be reminded to check that they are connected to their School Server as sharing works more consistently in this environment than on the mesh network. We didn't emphasise the importance of laptops being on the same network (School Server or mesh 1, 6, 11) to see each other. A future training session should be conducted when a newer build with more reliable collaboration is deployed.

We used some activities that require drag and drop to extend touchpad skills. An example is Fototoon, where we taught them to add photos (to make a storyboard) and speech bubbles which they could drag around on top of the photos. Fototoon could be used within existing curriculum areas when a student needs to demonstrate knowledge of the steps in a process, by taking photos of each step and then writing on the photo what each step is.

We showed the students and teachers the Finance activity, a useful activity to complement the mathematics curriculum goals. This activity requires the user to enter credits and debits, with dates and categories. It provide a running balance at the bottom of the screen so they know how much money they have available. They can also create a graph showing categories of expenditure and set budgets for the year for each category.

Students and teachers named their laptop and chose their own colour. Naming and choosing their own colour created a stronger sense of digital identity and underlined the need to always use the same laptop. Teachers and students can now identify each other in the neighbourhood view and successfully share and collaborate with the right groups. The names also assisted in School Server registration, as Moodle records student's attempts on quizzes and other Moodle work with their laptop name and the serial number of the laptop, making it easier for teachers to read student submissions and results.

We conducted School Server training with the teachers and students, covering how to navigate Schools Wikipedia, how to download and read ebooks, and how to download and start activities. News of how to download and start Tux Math spread quickly through the class, cementing these skills. These parts of the School Server are like a tiny slice of the Internet, skills learnt in this context (such as how to find information) are directly transferable to the real Internet. Downloads are saved in the Journal and once downloaded can be accessed without returning to the School Server.

The girls at Laumoli School discovered the Arithmetic activity and quickly taught each other how to use this mathematics game to test their knowledge. The boys tended to prefer Tux Math which we attribute to its video game approach to math drill complete with sound effects.

We showed teachers and students how to “favourite” activities from the list view which adds them to the activity ring in home view . This was necessary for the students to see some of the new activities that came with the new build and for students to manage the size of their activity ring now that they can add further activities from the School Server.

Teacher training was provided to create courses in Moodle and edit topic headings. Some basic training on creating glossaries and quizzes was given to some teachers but not all due to time constraints and information overload. This is advanced training and we recommend it is continued at a later date when the teachers have had a chance to practice all the other new things learned over the two weeks.

Panapa, Laumoli Principal, was given instructions on reflashing laptops. He practiced with Tai's support to gain confidence. This is complex and includes many steps so is an achievement to be proud of for someone new to using computers. The steps for this process are: backup the Journal; reflash from the USB (esc key to gain prompt then type in command); reboot while plugged in; have the user name and colour their laptop; add Samoan language from console and change the language in the settings; restore the Journal and restart the laptop; connect to the School Server network and register the laptop; finally unmount the USB flash drive and it's ready to return to the user. Teaching schools to reflash reduces the need for MESC to send support to site for minor issues and students don't wait for laptop repairs.

Year 6 students at Laumoli were given 3B5 notebooks with the instruction to “become scientists”. We asked the students to study, observe and conduct research on the laptop, consider its design and start asking themselves questions like a scientist would. We told students to take the notebook home every day and show their parents what they have discovered and what questions they still have, and even to ask the parents what questions they can think of, and talk about these in class. We discussed some examples with the teacher such as “how does the computer take pictures with that camera” and “why does the touchpad go all the way across the laptop when we only use the middle bit”. We discussed with the teacher exploring the keyboard and the characters on each key. The students knew that the shift key could make capital letters, but we had not seen any use of other non-alphanumeric characters other than full stop and comma. We showed the “alt gr” key but suggested they get the students to try to discover the purpose of the other unknown keys on the keyboard.



Paia students were given homework by us one evening (normally this is given by their own teacher). We asked them to write about how the laptop helped them learn, trying to identify what activities helped them learn and in what ways. We gave them the option of writing in English or Samoan. The students did this homework (they all wrote in Samoan) and this work should provide a great insight in understanding the students current perception of the laptop as a learning tool. We recommend that the teachers and interested MESC staff ask the students if they would mind showing what they wrote.

We were asked to train Tai and Asi in the MESC IT office in Apia before going to the schools. This was not possible as Asi was away sick on the allocated days and Tai was the only available MESC IT support so had almost no training time. Instead, we trained them at the schools and in evenings. We disassembled and reassembled a laptop with Tai before we departed Samoa to ensure he can complete any basic maintenance such as screen or keyboard replacement. The NZ based volunteers are available via email to continue to provide technical support.



## Management of Laptops

We advised the MESC IT team, the teachers and students, that the student needs to always use the same laptop. The laptops are registered with the School Server and their name is recorded with the serial number, creating an account in Moodle. This will record the students work with their name. If Moodle is used for assessment, the results will be recorded also.

If laptops are to be reissued to new students at the end of the year they will need to be reflashed, customisations added, renamed with the new student name, and re registered with the School Server.

Consideration should be made for the storage of the exiting child's work. The journal backup to USB system is unsuitable for this purpose because the backup can only be understood by another olpc laptop. Further research should be undertaken.

## Spares and maintenance

We showed IT support staff where to [order spare parts online](#). We walked Tai through laptop disassembly, taking notes and photos to support the olpc wiki documentation.

We gave some training on reading battery health information on the laptop and some training on diagnosing faults with the laptops.

There are currently 75 laptops being used by students, with a remaining 25 laptops for use by teachers, IT and curriculum support, and other Ministry staff to aid in ensuring the pilot project is successful. We updated the software on 97 laptops leaving 3 laptops locked with no dev key and running old software. We recommend MESC get the IT Support team to unlock these three remaining laptops and update them to the build used in the schools.

Whenever a spare laptop is issued to a new student, it should be reflashed to remove old student data and the Samoan customisations applied before handover.

Tai and Asi have joined the olpc-nz mailing lists to gain access to volunteers with experience in testing the laptops.

## Internet access at the schools

Currently there is no Internet access at either school. While this limited the scope of our training, it means that the schools cannot email for support or look at the olpc wiki for instructions on activities or for lesson plans written by other teachers. When the teachers and students are more comfortable using the School Server (which is like an intranet), perhaps in three to six months, it may be appropriate to consider Internet connectivity. This would sit across both the IT support team for the analysis of different connectivity options, and the curriculum development team for the Internet safety side. New Zealand have an internationally recognised Internet safety programme for children that may be a suitable base for Samoa to begin their own programme.

# Recommendations

## Curriculum integration

We suggest the next step for MESC be to focus on curriculum integration; ICT should be integrated into the curriculum rather than being taught as a separate subject. We have offered to assist the Curriculum Development team and recommend that they use the spare laptops to meet regularly and learn the activities collaboratively. The true power of the laptop in transforming learning comes through collaborative construction of knowledge and understanding.

We have offered to continue to advise and assist IT Support staff via email and phone from New Zealand. IT Support staff will need to provide training to the Curriculum Development team. Tai and Asi have a completely different understanding of how the laptops impact students now that they have seen olpc volunteers working with the schools. The curriculum team will need to work with schools to ensure the laptops are used appropriately to support the pedagogy embedded in the olpc laptops. Lesson plans are available on the olpc wiki that may be useful as a starting point, and we are happy to assist the curriculum team in locating these.

We recommend Moodle training for the curriculum development team. This requires using a School Server which we suggest the IT team set up at MESC office. We can support this remotely and assist in the training of the curriculum development team in the use of this learning management system to create courses and learning materials for the schools. Courses for each subject at each year level can be developed in Apia and installed onto the other School Servers using a flash drive. Documentation can be provided for this. We recommend that consideration is made for the pedagogy behind the olpc laptops and viewing the students as creators and constructors of knowledge.

## Future training on site

It would be useful to have the teachers and students learn TurtleArt and/or Scratch in the next training session. These two activities are particularly powerful in creating an environment where the student is the creator and leads their own learning. Currently students use Scratch to play games that come as examples and they would benefit from a helping hand in seeing Scratch as a tool to construct new games for themselves. In learning TurtleArt students will become competent mathematicians and learn to perform complex calculations as they create their projects.

The teachers and students are yet to make a strong connection between their laptops and the existing curriculum. This is evident in that the laptops are used at the end of the school day rather than during the school lessons to supplement the class activities. Assistance with this can be found by exploring the lesson plans on the olpc wiki and joining the IAEP and Educators mailing lists.

The teachers need more training on Moodle to utilise its capabilities such as creating lessons, discussion forums, glossaries and quizzes. This is training that we recommend is delivered over a series of spaced out workshops that consider course design as well as the technical skill of using Moodle. Tabitha's experience as a consultant for a Moodle partner for approximately six years can be utilised to support the curriculum designers and IT team with planning future Moodle training.

There were a number of more technical details that we either did not explain or observed that our explanation had not been successful. We suggest the following further training for the touchpad, Journal, using networks, and improving power management:

As previously stated, it may be useful to teach students and staff to change from capacitive to resistive touchpad modes. This would allow users to utilise the whole touchpad instead of only the middle section. The resistive mode requires a different use model so should be taught after the teachers and students are competent with the capacitive mode. To switch modes go to “my settings”.

Future training should explore using the Journal more effectively: how to “keep”, giving descriptions and using tags; how to erase from the Journal as it gets full; how to view and restore from the backups that are automatically made by the School Server (this was only shown to the MESC staff).

Collaboration using the School Server network and mesh networks needs more training. Although there are some known issues with collaboration, the benefits outweigh the difficulties. A future Dextrose release may resolve some of the difficulties. Training should include how the School Server backup works and how to restore work if it is lost, as well as the importance of connecting to the right network (School Server resources are only available on the school network, there are also 3 mesh networks to choose from).



Power management training should include: how to turn the laptop off, how to put the laptop to sleep and how to tell if the laptop is sleeping; power consumption and battery life when the laptop is on, when it is asleep, when the screen is dimmed and when “power saving” is enabled; and how power consumption effects battery charge time (batteries charge faster when the laptop uses less power).

## **Training for interested MESC staff**

This recommendation is to raise awareness of the olpc programme and its impact on these two schools so as to ensure MESC are able to make informed decisions in the future about how they approach ICT in schools, with or without olpc.

## **Dedicated support**

There is currently no MESC staff dedicated to supporting the olpc initiative; there is an “in addition to your job description” expectation of the IT Support team. We would recommend that olpc support be included in the position description of the IT Support role to a level that allows the technical team time to learn the systems and support the ongoing maintenance of the laptops. We recommend that they document the time required for this role to date and to train the Curriculum development team. Understanding the time requirements for supporting two small deployments will assist MESC in planning support for future deployments if they occur.

We recommend MESC consider contacting Dev Mohanty who is currently living in Apia and has considerable experience with olpc having spent one year with one of the first olpc deployments, OLE Nepal. Dev provided us considerable assistance during our trip to Samoa and useful advice on setting up the wifi networks at the schools.

## **Upgrade to the “final” Dextrose release**

We upgraded the laptops from os767 to os300py, a beta of the “Dextrose” release. The final Dextrose release will be completed in the next months and we recommend that the deployment be upgraded when this happens. We will endeavor to prepare a customised version containing the Samoan translation work to simplify the upgrade procedure.

The final Dextrose release will likely remove the mesh network feature, replacing this concept with “create new wireless network”. Training will be required to explain how and why to use this.

## **Update activities on the School Server**

Currently the School Server has many activities selected for compatibility with olpc release 8.2.1. We ended up migrating the laptops to Dextrose, which includes newer versions of some activities on the School Server and supports more activities than 8.2.1. In addition, we did not use the XS-activity-server <http://wiki.laptop.org/go/XS-activity-server> when preparing this library of activities. We will provide support to update the activities and enable the XS-activity-server. Of particular note is the WikipediaEN activity, which several teachers expressed their appreciation of. This activity is not included in Dextrose and the version in 8.2.0 was not compatible so we could not migrate it.

## **Shift Paia external wifi higher and replace cable**

We installed an access point half way up the flag pole outside Paia Primary School, giving access to the school network in the school grounds and into part of the village. Performance in the village is limited by intervening trees, if this access point can be mounted higher on the flag pole, performance in the village will be improved. We used ethernet cable designed for indoor use as this was the resource available at the time. This will degrade in the sun and will need to be replaced with ethernet cable suitable for outdoor use. Moving the access point higher will require a large free-standing ladder as the pole itself is unsuitable to support a very tall ladder.

## **Power points in the classrooms, extension cables and multiboxes**

If the laptops are to be integrated into the curriculum the teacher and students will need to be able to charge their laptops during class. Currently there is not a power point available in every classroom and there are not enough multiboxes for each class. A ten metre extension cable in each room and a multibox for each side of the room would allow continuous use of the laptops during class time. Building a mass charger like that described in <http://me-damitr.blogspot.com/2010/08/mass-charger-for-olpc.html> should also be considered -- MESC has 100 surplus XO chargers with American plugs from which the cable could be harvested.

## General comments

We found both schools very friendly and welcoming. The teachers opened their homes to us to stay with them and looked after us very well. We thoroughly enjoyed getting to know the teachers and students. We were greatly impressed by the level of involvement of the community in the schools, with parents and guardians coming into the school for reading, and requesting to come into the school for computer classes to learn how to help their child.



Before departing Laumoli, the students read aloud in English the thank you letters they had written for us. Not only was the farewell touching but we were impressed with the quality of the speeches the students gave in English.

## Other support for MESC

We understand Falealili Secondary School have been given Mac computers and apparently are not using them as they need support. We have found suitable people to consider requesting support from; contact details can be provided. Mats of Seipepa in Alamagoto is a competent Mac user and is able to assist the school; Computer Services Limited (CSL) in Apia are also able to support the Mac computers. Contact details can be provided via email. MESC could consider changing the operating system from Mac OS X to a free open source operating system (like that running on the olpc laptops) or a purchased Windows operating system. The Mac computers will run these operating systems.

Rosemarie Esera advised us that MESC are working on a secondary schools ICT project called Schoolnet. We have extended an offer to support MESC in understanding how they integrate the Schoolnet program with the olpc deployment and use insights from the olpc deployment so far to assist in the success of the Schoolnet programme.



# Documents to support this report

## Documents written

The olpc Samoa wiki page - [http://wiki.laptop.org/go/OLPC\\_Samoa](http://wiki.laptop.org/go/OLPC_Samoa) which includes:

- Equipment supplied
- Server resources list
- Server and wifi setup documentation

Dis-assembly instructions - <http://wiki.laptop.org/go/Disassembly>

Serial number and asset record showing who has which laptop - Lenara has this

Bug report list

- <http://bugs.sugarlabs.org/ticket/2186>
- <http://bugs.sugarlabs.org/ticket/2185>
- <http://bugs.sugarlabs.org/ticket/2184>
- <http://bugs.sugarlabs.org/ticket/2183>
- <http://bugs.sugarlabs.org/ticket/2182>
- <http://bugs.sugarlabs.org/ticket/2207>
- <http://bugs.sugarlabs.org/ticket/2206>
- <http://bugs.sugarlabs.org/ticket/2205>
- <http://bugs.sugarlabs.org/ticket/2207>
- <http://bugs.sugarlabs.org/ticket/2208>
- <http://bugs.sugarlabs.org/ticket/2230>

## Documents to be added

- Translation instructions for Pootle
- Reflash XO instructions
- Instructions for adding Samoan language to laptops
- Moodle technical training material for IT Support
- Moodle course developer training material for the Curriculum team
- Documentation for adding Moodle courses to the School Server
- File formats supported by the XO laptop