

# Report on OLPC Teacher Training mission to Nauru

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## Summary

Nauru has deployed an initial 35 OLPC laptops at Yaren Primary School in July 2008. This is reported in the OLPC Oceania pages (see references below). The Minister of Education has publically voiced his strong support for the project. SPC has allocated a total of 200 laptops from the 5000 gifted to the Pacific Islands to Nauru, based on high-level discussions and prior agreement. Consequently, the Director of Education wrote to the DG, SPC, to request the balance of the laptops. These 165 were dispatched by OLPC Australia on behalf of OLPC Oceania and arrived in country on 19<sup>th</sup> September 2008. They were all fitted with slim-fitting Australian power chargers. The Ministry also requested further teacher training inputs and technical advice from SPC. Consequently, the author visited Nauru between September 21<sup>st</sup> and 26<sup>th</sup>. The following were completed:

- Three and a half full days of teacher training, covering use of the XO's, the XS server, local content creation, laptop upgrading, translating the laptop via the Pootle server Nauru project, and planning for student training and deployment
- Technical training for the support team, including setting up an XS server, localisation, transferring content to the XS
- Upgrading the server to XS v0.4 and the 200 laptops to build 711 (8.1.2) firmware 2QE18
- Installation of a three-access point system for the Yaren school server
- Advice given on project support and local support team set up.
- Activities coordinated with USP Centre
- Install CD of XS v0.4 given to Chubasco
- DVD given to Eroni to make and distribute copies
- Following this training, it was agreed by SPC to ship an additional 50 laptops to Nauru so that all Grade 1 students plus grade 1 and grade 2 teachers (and others involved in the training) will have laptops.

This report serves two purposes:

- To report on the outcomes of the mission
- To record recommendations and describe follow up actions for the Ministry of Education, Yaren School and the supporting team.

## Contents

Actions for follow up are listed at the end of each section below.

1. School System in Nauru
2. Training Participants List
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5. Localisation
6. School Planning
7. Ministry Planning (via OLPC Committee)
8. Content development
9. Using the Wiki



Yaren P.S. viewed from the road, with the solar-powered grade 1 classroom (orange walls) and one of the grade 1 classrooms closest to camera on the left (top picture)

## School system

The total number of enrolments for primary school in 2008 is 1253. The total number of enrolments in Year 1 (2008) is 199 and thirteen teachers (9 class teachers, two ICT teachers and two Principals). 2009 will have a similar number (205 indicated at time of writing).

A rough outline of the primary school system in Nauru (2008 figures) is given below.

	Yaren P.S.	Aiwo P.S.	Kayser College
Grade 1 classes	6		2
Enrolments	158		41
Grade 2 classes	5		2
Enrolments	164		44
Grade 3 classes		5	2
Enrolments		166	44
Grade 4 classes		5	2
Enrolments		168	33
Grade 5 classes		5	2
Enrolments		177	51
Grade 6 classes		5	2
Enrolments		164	42
Number of teachers (Primary, plus Principal)	12	21	13

Note, Kayser College caters for 3 pre-school years plus all primary and secondary up to Year 10. There are also two other secondary schools and a number of pre-school institutions and a school for disabled. A summary is shown below:

<u>School</u>	<u>Total classes</u>	<u>Total enrolments</u>
Yaren P.S.	11	322
Aiwo P.S.	20	675
Kayser College	23	493
Nauru College	14	451
Nauru Sec. School	7	227
Boe Infant School (I.S.)	9	225
Meneng I.S.	5	125
Nibok I.S.	5	123
Able-Disable Centre	4	8

## Training Participants list

Several of the trainees had also attended the initial training in July.

Name	School / Org	Position	Email
Sue Chen	Yaren Primary School	Moderator	
Lavina A	Yaren Primary School	Grade 2	<a href="mailto:lavkken@hotmail.com">lavkken@hotmail.com</a>
Kareen Karl	Aiwo Primary School	Grade 3	
Mary Tebouwa	Aiwo Primary School	Grade 1	<a href="mailto:Mary_tebouwa@hotmail.com">Mary_tebouwa@hotmail.com</a>
Rotien Stephen	Yaren Primary School	Grade 1	
Salodina	Yaren Primary School	Computer Trainee	<a href="mailto:salodina@hotmail.com">salodina@hotmail.com</a>
Lenora Depaune	Yaren Primary School	Principal	
Veronica Degia	Yaren Primary School	Grade 1	
Jean Akubor	Able Disabled Centre	Grade 2	
Sally Dageago	Yaren Primary School	Grade 2	
Winnie Fritz	Kayser College	Yr 3	<a href="mailto:winnie.fritz@naurugov.nr">winnie.fritz@naurugov.nr</a>
Darren Tsiode	Aiwo Primary School	Grade 3	
Vani Uepa	Aiwo Primary School	Grade 3	
Claire Bam	Yaren Primary School	Grade 1	
Floria Detebene	CASE UNIT Edu	Secondary Manager	<a href="mailto:floria.detebene@naurugov.nr">floria.detebene@naurugov.nr</a>
Sr. Kabwebweua	Kayser College	Yr 1	
Loretta Dekarube	Kayser College	Yr 1	<a href="mailto:roses3970@yahoo.com">roses3970@yahoo.com</a>
Chubasco M Diranga	ICT Centre (Nauru Gov)	Trainee Net Engineer	<a href="mailto:chubasco.diranga@naurugov.nr">chubasco.diranga@naurugov.nr</a>
Eroni Tuiloma	USP Centre and ICT Centre		<a href="mailto:eroni.tui@gmail.com">eroni.tui@gmail.com</a>
Branessa	USP Centre and ICT	Deputy Director	<a href="mailto:bitz_969@hotmail.com">bitz_969@hotmail.com</a>
Sydney Kephes	Aiwo Primary School	Grade 3	<a href="mailto:sydneynr@yahoo.com">sydneynr@yahoo.com</a>

## Training Schedule

	Morning	Afternoon
<b>Mon 22<sup>nd</sup></b> (Sept)	Introduction to OLPC Preview of the laptops Activity 1 – Expectations, hopes and fears	Updating laptops (participants update theirs) Update server and set up access points
<b>Tues 23<sup>rd</sup></b>	Using the laptops Networking with the XOs	Using the server Activity 2 – Creating teaching resources
<b>Wed 24<sup>th</sup></b>	Accessing the Internet Setting up Gmail accounts More practice with activities	eLearning websites on the Internet Translating the laptops into Nauruan Inviting and sharing
<b>Thurs 25<sup>th</sup></b>	Templates for teaching ideas Activity 3 – Teaching ideas for activities	Planning ahead Wrap up session

The workshop participants consisted of two groups; those who had participated in the previous workshop and a few teachers new to the project. Therefore, the agenda was customised to attend to the needs of both groups. Some feedback from the workshop is listed below.

- The training on using the laptops referred to the OLPC Oceania Teacher Training strategy and guide
- All laptops had Internet access via the server by Wednesday morning
- It was important to help the teachers appreciate the mesh networking system, and how to tell where their laptop is connected and how to connect manually to the server and access points. This worked well.
- The session on setting up Gmail accounts (using Gmail Activity) was difficult as many teachers were first timers with the Internet. The sign-up page is awkward, especially the section where a distorted image of text has to be transposed as a security measure. However, a few managed to set up email addresses and all have the awareness to follow up with Salodina's help.
- The session on eLearning websites used the Solomon Islands SchoolNet website, which has a "content" page with links to many educational websites with interactive multimedia eLearning resources, such as "e-Learning for Kids" and "Skool.com". This was received with great interest.
- During the workshop participants helped to translate most of the "Chat" activity into Nauruan using the Pootle translation system. We logged on using the author's account, and this will be followed up with coordination from Eroni and USP Centre.
- The networking performed well, with participants reliably inviting each other.
- In order to help with the development of teaching ideas, a simple template was created and placed on the server (see annex). A new folder "teaching ideas" was created in the "demonstration content" used on the server. The workshop participants created several ideas of their own (see annex) and these are now captured using the templates.
- The participants were shown the wiki Activities page to help them appreciate that the set of activities on the XO is not fixed.
- Salodina provided technical assistance to the teachers throughout the workshop, and Chubasco helped with the networking and server issues.
- The "Planning Ahead" session is explained further below, and comprised of:
  - How the school can plan ahead to train the students and how to build a framework or roadmap for introducing the laptops into lessons. This used the Niue framework as an example.
  - The Ministry-level planning, including an evaluation framework (Solomon Islands example given)
  - The local support team.

#### Activity 1: Reflecting on expectations, hopes and fears

In groups of 4-5, participants discuss the following questions and then report their feedback.

- How do you think computers and ICT can help with teaching and learning?
- What are your first impressions of the OLPC laptops?
- What are your hopes and fears concerning the OLPC project?
- Do you think OLPC will work in Nauru?

The feedback from this activity is recorded in the annex. Note for future workshops: it is a good idea to write the "hopes and fears" on flip chart paper and hang these around the room, so that participants can reflect on them throughout the training and then "wrap up" at the end of the workshop to consider how their views have developed.



Solar power supply can be seen at rear

**Activity 2: Create some teaching resources using the Write, Record and Paint activity**

This activity was conducted as “homework”. Participants looked at examples of simple teaching resources created by teachers in the Solomons (during the Sobiro training – see Solomon Islands page on the wiki), and also at the local language “PDF readers” published by SIL in PNG. They then tried to use Write to create simple “illustrated readers” in Nauruan, mainly targeted for Grade 1 and pre-school children. They considered ways of adding illustrations, using Paint, Record (photos) and hand drawn pictures to be scanned.

### Activity 3: Teaching Ideas using the activities

The participants divided into four groups, and each group looked at a particular set of activities, and then discussed and tested simple teaching ideas. They then used the teaching ideas template on the server, opened with Write activity, to record their teaching ideas. These were then copied to the server using a flashdrive (as uploading is not yet supported).

- Group 1: Literacy – Write, Speak
- Group 2: Measuring, maths and science  
Calculate, Measure, Stopwatch, Clockgame, Distance, Ruler
- Group 3: Art and multimedia – Record, Paint
- Group 4: Educational games – Memorise, Connect, Jigsaw, Cartoon builder

Note, we could have added a Group 5 for “programming activities” but these need more advanced skills and we did not have time to train the teachers. However, they were mentioned, and it was noted that older students might be allowed to participate and introduce these activities to school life – as is happening in Niue with the secondary students “hackers club”.

Some teaching ideas developed by teachers from this activity are shown in the annex.

### ***Actions (Teacher Training)***

- Teachers to form support group (see School Planning)
- Training Certificates; David to print and mail to the Director, to sign and issue.

## **Networking and server**

A PC provided by the Ministry has been installed at Yaren in a double classroom block. USP Centre have provided solar power backup for the classroom. The Ministry ICT Advisor and RONTTEL have provided an Internet connection via a wireless link, with a CPE mounted on the roof of the classroom directed at a wireless tower of the island-wide wireless network. In this mission, the server was upgraded to version 0.4 and two additional access points have been added. Chubasco is to install the access points three grade 1 classrooms as shown in the diagram, using buried Ethernet cables.

Note, when the next server version is available, it will have considerable additional features. Eventually it will update and backup the laptops automatically, and also have a Moodle content management system, so that the manual HTML framework set up as a demonstrator, will not be needed. It will then support uploading wirelessly from the laptops. See more about version 0.5 here: [http://wiki.laptop.org/go/XS\\_Roadmap](http://wiki.laptop.org/go/XS_Roadmap)

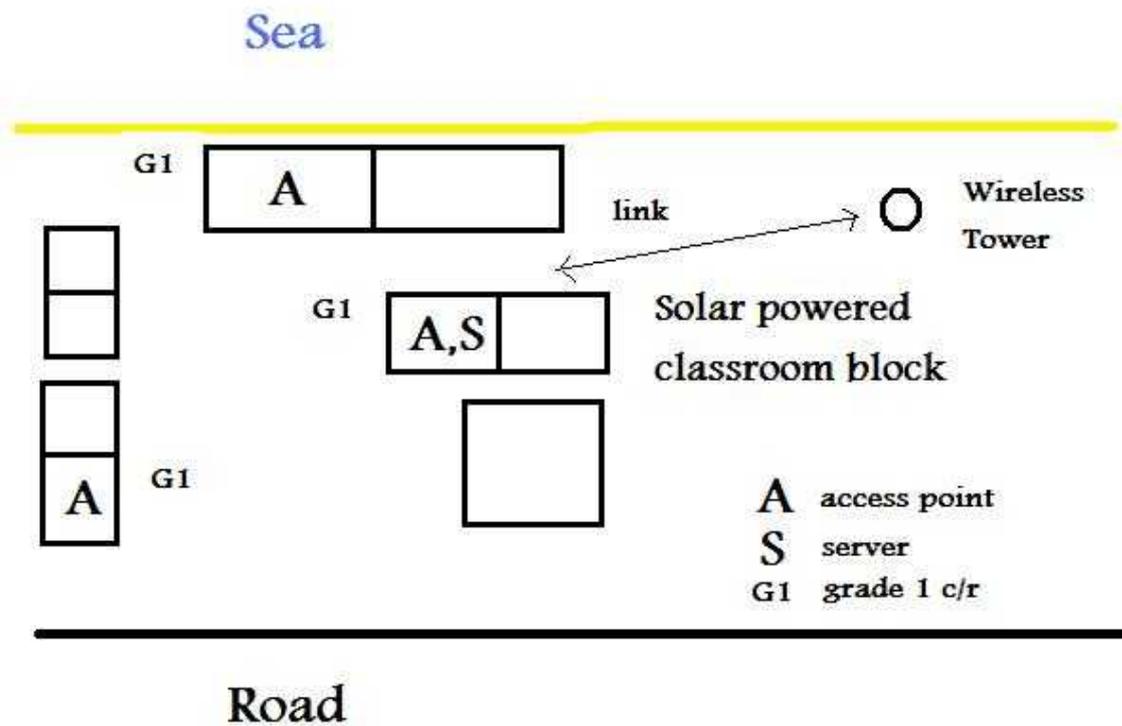
A diagram of Yaren Primary School showing server and access points is shown below.

### Filtering and Internet Safety

The Ministry will be deploying a filter on all Internet access to education facilities. Meanwhile, care must be taken to ensure that children are not able to access inappropriate websites. An education campaign is also recommended, and SPC will advise on the “Netsafe” programme.

### Power

In terms of power infrastructure, the school has mains power much of the time. However, during outages the solar power will be used. However, a tripping inverter needs to be fixed and power supplied to the remote APs.



### Upgrading laptops

The author brought copies of the latest builds of the activities. There are some significant improvements over the versions used in the initial 35. All the 165 new laptops were upgraded. Flash needs to be installed to ensure all laptops can display the e-learning multimedia web resources. Salodina and Chubasco were trained. All the updates were left on 6 flashdrives and on the DVD given to Eroni (to circulate).

### ***Actions (power and networking):***

- Run Ethernet cables in conduits to the two outlying grade 1 classrooms and install the two Linksys WAP54G access points (wall mounted).
- Consider the best way to ensure solar-power reaches the access points. This might be done by running AC or power over Ethernet. The WAP54G may be compatible (the author will advise). The cable run should be made as short as possible (i.e. a direct line to the classroom).
- Fit a UPS to the server so that it will function during change over to solar.
- Test the solar power inverter which tended to trip during the training.
- Salodina to coordinate upgrading all 200 laptops including the initial 35, and installation of Flash on each.
- David to give advice to Chubasco when the server v0.5 becomes available.
- Servers need to be set up and installed at Kayser and Aiwo PSs.
- David (SPC) to investigate how to get the browsers to connect to the island-wide Internet. There is an issue with this as the Browse activity does not support pop-ups. OLPC Australia have some experience in this. David will advise Chubasco.

**Responsible persons:** Chubasco working with Salodina, Xavier to check the inverter.

## Localisation

A Nauru language translation project has been opened on the OLPC Pootle server. This is a system that will allow the XO laptops to be run with all the menus and text in the activities in Nauruan. It will be possible to “toggle” between English and Nauruan.

The process of translation was demonstrated in the training. Participants translated most of the “Chat” activity into Nauruan. The difficult part is to make sure the translation is correct – as was obvious in the workshop, even a simple phrase generated some debate amongst participants as to the correct translation. Therefore, it is recommended that the work is subject to “quality assurance” by the OLPC focal team, in the Ministry, who will refer to any official policy regarding language.

The actual work of translating is simple. The website address is: <https://dev.laptop.org/translate/>  
During a meeting with the support team, it was agreed that USP lead this activity, with Eroni responsible to coordinate and assist volunteers who wish to help type in translations.

Initially, volunteers must create an account on the Pootle server by:

1. Going to the site above, and registering. An authentication code is sent by email. This must be added to the authentication page to validate the account.
2. Now log on to Pootle. And click on “Change Options” and add the following:
  - a. Interface language, select English
  - b. My Languages, select (highlight) both English and Nauruan
  - c. Click Save Changes
3. To start translating, click on “Nauruan” or “My Account” and “Nauruan”. You will see a number of “projects” Fructose, Glucose, etc. These contain the activities and operating system texts.
4. Please send all the Pootle usernames to the author, to add to the sign-up page below:  
<http://wiki.laptop.org/go/Pootle#Sign-up>

The text-to-speech synthesiser (Speak activity) can also be localised into Nauruan. The author will provide the Nauru team with more information on the process. Meanwhile, during the workshop it was found that changing the “Voice” settings in Speak activity to “German” gives a more accurate pronunciation of Nauruan text than the default English.

### *Actions (translating the laptops to Nauruan)*

- Eroni and others (suggest Salodina, Branessa and Xavier) register accounts on Pootle and send usernames to David.
- David provide guidance to help Nauru team continue with the translating
- Committee to periodically review, with reference to official language policy
- David to provide advice on translating the text-to-speech synthesiser
- Teachers can use the “German” voice setting in the Speak activity as a stop-gap

# School planning

Yaren Primary School should now lead the other two schools in planning the way forward.

## Allocation

Depending on advice from the Ministry, the final student allocation between grade 1 classes in the three schools should be agreed, and all names entered in the laptops and the final table with serial numbers prepared.

## Students training

The most urgent requirement is for the enrolled students in the classes involved in the trials to be trained.

Training should be carried out over at least 3 afternoons (a week is recommended) of 2-3 hour sessions after school. A detailed lesson plan is not required, but the following plan can be used:

- Student training needs a lot of trained teachers and helpers. There should be about one trainer to 5-6 students maximum. Plan availability of teachers and write a training schedule catering for all the classes.
- It is best NOT to issue laptops to children until they start training. Do not let them take them home before the parents have been briefed and parents agreement signed.
- The videos of OLPC training in PNG and Solomons can be viewed to get an idea of the dynamics in the student training. See the OLPC wiki Oceania pages for Youtube links or the DVD given by David to Eroni for circulation (the schools should each have a copy).
- Consider inviting older students to some of the training. This will help them appreciate and respect what the project is about and prepare them for when their classes are “saturated”. Older students will be able to explore more advanced activities such as eToys, Pippy, etc. They will also be able to assist the younger ones.
- Consider inviting Parents to some of the training (suggest that you start the training first, then invite them for the later few sessions / afternoons). You can then brief them on the project and help them understand how it is linked to improving quality of education.
- The training plan will be quite simple:
  - Basics: opening, starting and shutting down, the 4 screens or “views”, volume and brightness controls, charging, etc. This can be done as a whole class together.
  - Activities: Show them the instantly appealing ones first such as Speak, Record, TamtamMini etc. This can be done as a single group, with teachers starting to work more in helping small groups of children.
  - More Activities: Write, Paint, Memorise, games, etc. This will start to introduce
  - Sharing and Inviting: Try getting them in groups using Memorise and Chat.
  - Looking after the laptops, being responsible, sharing with family, bringing the laptops charged to school.
  - It is also a good technique to split into smaller groups
  - Teachers should monitor the connection of the children’s laptops when doing sharing and inviting. To improve reliability, make sure they are all connecting to the server. Away from the school the laptops will automatically connect as Simple Mesh.

## Parents Agreement

During student training or otherwise, brief the parents on the project. Give them the print out of the OLPC Info (either photocopy the teacher training handouts or print using the DVD provided by David). You can also show them the videos of Peru, Solomons and PNG, and the Ministers statement from the Nauru TV (the Director has a copy on DVD).

You might have two sessions, one for parents of each Grade 1 class and one for other grades (or write them a letter explaining the project) to prepare them for when their students get laptops and avoid “jealousy”.

Points to explain:

- The OLPC worldwide project
- That SPC is leading a Pacific Islands OLPC programme and 200 have been gifted to Nauru. The Ministry wishes to seek funding to saturate all primary school classes and new entrants to G1 each year.
- The 5 core principles (from the hand out)
- Demo of the laptops
- How the laptops are used in school
- Looking after the laptops, sharing them at home, charging, etc
- The Parents Agreement

Parents should then sign the agreement and scan a copy for the school records (and Ministry). Laptops can then be handed to students to keep.

#### Laptops Class

After training, the Principals should consider working with teachers to allocate school time to a “laptop class”. This might be a one hour weekly class or a short, more frequent period, or outside school time. The classes can be used to generally help students and to get a feel for how the students are using them in their own time. Good ideas can be encouraged, and mini projects started. SPC is happy to input into this process – i.e. sharing student ideas from other countries - if requested.

#### Teachers OLPC Club

All teachers involved in the trials and who have received training should meet regularly, maybe once a week, to share skills and especially **teaching ideas** for the laptops. Teachers of the grade 1 classes with laptops should give reports of progress in using the laptops, referring to the evaluation framework (see Ministry Planning below). A short summary of these meetings should be written for the committee as an important part of monitoring and evaluation. These reports can be used to brief the Minister.

#### Framework

The school should start to prepare a roadmap or simple plan to help the teachers start to introduce the laptops in their classes. The Committee can review this and help develop it. SPC can also assist if the school drafts an initial plan.

An example from Niue is included in the handouts given to teachers, and in the annex of this report. The initial plan for Yaren and Kaser Schools needn't be so ambitious at first, but can be developed as teachers gain experience and are able to form expectations of the rate of student (and teacher) progress.

A table with a suggested outline is included in the annex, following the Niue framework.

## ***Actions for the School***

The detail is described above. The responsibility will be the Principal's, in consultation with the teachers and supported by the Ministry / Committee and with technical assistance from Salodina.

- Final allocation of laptops
- Arrange and conduct student training with parents involvement
- Arrange hand-over of laptops and signing of Parent's Agreements
- Develop a framework / roadmap for introduction of laptops in classes
- Start the teacher's self support "OLPC Club"
- Start to systematically record and archive teaching ideas, using the "template for teaching ideas" or other method. This will be a very useful way to evaluate progress and to maintain a pool of knowledge in the school.
- Also refer to the section on "content" below.
- The above should be coordinated with the OLPC Committee

## **Ministry planning**

An important part of a sustainable OLPC project is the leadership given by the Ministry. In Nauru an OLPC Committee has been created (see previous report). The important roles of the Committee at this stage are explained below.

### Linkage to education reform

It is important to integrate the OLPC trials into the education reform programme. For instance:

- Teacher professional development might be a priority. In this case, an emphasis should be placed on using the laptops to help teachers access appropriate resources, training materials, and to do their work more effectively.

### Trials objectives and evaluation framework

Development of an objectives and evaluation framework. This will provide the objectives of the trials and the indicators to be used to measure progress. This will provide quantitative and qualitative data to evaluate the impacts of the project, as required (for instance) by the Minister and in the negotiation of financing for any expanded programme. The objectives should be designed around the priorities of the Ministry, whilst being consistent with the core principles of the OLPC.

An example of an objectives framework from the Solomon Islands is given in the annex. This was developed by a committee of the Solomon Islands Ministry of Education, to evaluate how the OLPC fits into their own reform programme, and can be used as a starting point in the design of a Nauruan framework.

### Monitoring and evaluation

Once the evaluation framework is in place, the Committee should design instruments to measure progress, and organise monitoring and evaluation activities. For instance, questionnaires can be designed around the evaluation framework, and use to interview teachers, parents and others. The teachers "OLPC Club" or self-help group will be a key vehicle in the collection of evaluation data. Other methods include class observations, for instance by school standards officers. SPC (via the author) can share experience and best practice from other countries, but the evaluation system should be home-grown and developed to measure the particular needs and priorities of the host country's education system.

### Support team Roles and responsibilities

A Support Team has been identified. The Committee can consider the team below and if approved, give endorsement.

- Salodina – Laptops, server, Internet, Wiki, translating, maintenance and updating, general support and training to teachers
- Chubasco – Server, access infrastructure, power, maintenance, technical support
- Eroni – Translating, usage training, research, power
- Branessa – Educational use, translation, usage training, research

### Allocation

The Ministry is responsible for the policy regarding allocation of laptops. The policy might be called one of “horizontal saturation”, i.e. to saturate the year one classes first, and then move up the grades. Following SPC advice, not only Year 1 teachers have been given laptops, but all teachers involved in training, plus the Principal, ICT teachers and support team. This is to maintain a sustainable pool of OLPC capacity and a culture of sharing teaching ideas and self-support amongst the teachers.

Next year, the laptops will follow the students to Year 2. It is thus important to make sure the Year 2 teachers are also trained and have laptop skills, and are allocated laptops before the 2009 school year. This has been taken into account through allocation policy. Following the deployment of an initial 35, then the remaining 165 of the 200 already allocated by SPC under the gifted programme, the Ministry has requested an additional batch to allow all Year 1 students plus teachers to be allocated laptops. It was agreed in a meeting at Noumea that SPC will supply an additional 50 laptops, which are to be dispatched immediately.

Laptops should be only given to students after training and with parents briefing (see School Planning above).

### Student training and hand over

The Committee should plan how to assist and facilitate the student training and official handover at each school. The Schools should actively plan for this, the Ministry can facilitate. There may be opportunities to raise political and community awareness, during the handover ceremonies, etc.

### Volunteer programme

OLPC Australia in association with SPC is developing a volunteer programme. Suitably qualified volunteers can be posted to OLPC projects to give support in a number of areas, including technical/ICT, integration of the programme into teaching and learning, content development, training and running an evaluation programme. Most likely, a combination of these components. OLPC Australia will be upgrading their website and a more procedural approach to the evaluation of submissions from volunteers. Already we have a list of volunteers with suitable experience, for instance some are graduates who have spent time working at OLPC Boston (at MIT Media Lab) as OLPC Interns.

### ***Actions for the Ministry - planning***

- Develop an objectives and evaluation framework and assign officers to implement monitoring and evaluation
- Facilitate and support the “Support Team”
- Facilitate for the student training and handover of laptops
- Consider continued training needs. For instance, review the priorities of the education reform programme, and identify particular training needs associated with how the OLPC can impact on them.

Also consider the evolving programme (i.e. need to train Year 2 teachers). Requests for further training can be accommodated by SPC.

- Allocate laptops to all Year 1 and 2 teachers and other active teachers who have been trained.
- Consider requesting a volunteer to counterpart a local project officer (or the support team). Include a TOR based on the needs as seen by the Committee.

## Content

The current training in Nauru had a strong focus on local content capacity (i.e. teachers and education officers creating their own teaching resources for the OLPC server and laptops), and in accessing resources for teachers and students. The training section (above) describes what was done.

### Illustrated Readers

In particular, using the laptops to create “illustrated readers” in Nauruan or English, for various student grades. Trainees were shown the SIL “PDF” writers in PNG languages, and then attempted to emulate these. SPC is assisting the Ministry with advice on the best way of creating such readers, i.e. software and templates. This will allow a standard approach, with templates for teachers and curriculum developers. The approach here is to publish materials as non-editable PDF files or “eBooks” in landscape format, which open in full-screen view on the laptops and can be read page by page.

### Techniques for creating both non-editable and editable resources

Whilst Microsoft Publisher and similar proprietary formats can be very effective if they can be exported into PDF format, it should also be noted Open Office Writer is a powerful free and open software that has a built-in PDF export function. Versions 2.3+ are also able to export media wiki text files that can be directly pasted into wiki pages, allowing offline development of wiki content.

The Write activity on the laptop saves its files as ODT format, which is used by Open Office Writer. Thus, teachers can develop materials (i.e. reading activities) for students, and then further develop them using Open Office on Windows computers if more sophisticated design techniques are needed, and to export (publish) them as non-editable PDF files.

Thus, it will be very useful if teachers have access to a Windows computer, operated (maybe) by Salodina and/or curriculum officers, or other support personnel (including USP students??). Then they can scan and add drawings and publish PDF files of resources created on the OLPC laptops. Curriculum officers could create more sophisticated content linked to the curriculum.

Some materials will be editable; i.e. student worksheets where students complete, correct or otherwise edit the contents. These can be created using the Write activity on the laptops, and saved on the server. Students then access the resources from the server and can use them and save them (renaming them so they can be collected by the teacher). In later versions of the server, it will be possible for students to upload their completed worksheets to the server for marking by the teacher, and for archiving.

### Projects involving local content

There is considerable scope for creating a growing archive of local content. For instance, teachers might start a project connected to preservation of cultural heritage and knowledge. Students could create content in multimedia – writings, recordings, photographs, interviews, etc. That can be efficiently archived and backed up, and will not become degraded as will paper-based materials. They can also publish on the web (via wikis etc).

## Wikieducator

The Wikieducator training allows teachers to develop HTML based content, and as a secondary impact, contribute to a pool of open educational resources that can be shared across the Pacific Islands and beyond. Salodina has been trained, and can share this training with the teachers using OLPC laptops. Some examples of how the Wikieducator can be used with the OLPC are shown below.

- Salodina (and then others after Wiki training) can create wiki pages of teaching resources provided for the OLPC teachers. SPC can assist with developing a section on the Wikieducator specially for Nauru (under [http://wikieducator.org/OLPC\\_Oceania](http://wikieducator.org/OLPC_Oceania)). The actual content does not need to be designed by the one adding it to a Wiki – others can do this on paper first, or even using Open Office Witer (which is able to export media wiki files to be pasted into a wiki). Existing materials can be built up into an online archive on the wiki. For instance:
  - Lesson plans
  - Teaching handouts
  - Administrative handouts
  - Materials for lessons – resources to be used in teaching
- Pages of wiki resources can be collected together and downloaded as high-quality printable PDF files. These can be put onto the server. SPC can work with COL to develop specifically designed templates for PDF download, that will be formatted for the OLPC laptop display. The Wikieducator also allows collections of wiki pages to be downloaded as IMS Content Packages (a standard forma for sharing educational content, based on XML and CSS). These are zip files that can be uploaded into Moodle using it's "SCORM" feature, or manually onto the server where they are immediately browse-able using the laptops.

## Online resources

Teachers explored some examples of online multimedia learning materials during training. The Solomon Islands SchoolNet site has links on the page below. Two excellent examples are "E-Learning for Kids" and "Skooool.com". Note that Flash must be installed on the laptops to ensure some animations play. SPC will continue to advise on technical updates needed for video and multimedia formats.

<http://www.schoolnet.net.sb/courses/>

## exeLearning – an offline HTML editor

Another way to create HTML resources, but offline (if open publishing is not appropriate or Internet access unavailable) is "exeLearning". This is simple to use – see examples on the Solomon Islands webpage above (the Beekeeping and Vocational Teacher Training manuals at the top of the page were created by Ministry officials with only basic computing skills. Download and install exeLearning at <http://exelearning.org>

## Templates of teaching ideas

As described in the training section, a simple template to record and build up an archive of teaching ideas was suggested. Teachers should continue to systematically record these, and the evaluation process can use that as evidence.

## Content creating using other laptop activities

The "Memorize" activity is a useful example of an educational game that can be used to create local content. The "Create" (create game) feature of Memorize allows the teacher to create matching pairs of text, images and sounds. Images can be photos taken using Record or images saves as Paint, or jpeg files from a flash drive, saved

to the Journal. Text can be simple names, phrases or numbers (and calculations) and local languages are of course possible.

SPC is creating some examples of these games that will be made available to teachers to download from the OLPC Oceania wiki. These will illustrate how this game can be used to aid learning in many thematic areas, such as Fisheries, where photos are matched to their local language names.

Advice on using this activity is included in the annex.

## ***Actions***

- SPC to continue advising the Ministry on methods for creating “illustrated PDF readers”.
- Salodina to support teachers in creating and accessing content, via the teacher’s regular self-support group meetings
- Salodina (supported by the others) to explore using Open Office and the scanner to create teaching resources in PDF format, using landscape orientation.
- Committee to discuss what official and curriculum materials, lesson plans, etc could be made available on the server or the Wikieducator.
- Teachers to explore using Memorize activity to create educational games relevant to Nauru and the curriculum

## **Using the Wiki to share progress and experience**

Note that the Nauru OLPC wiki page can now be maintained locally. The Committee and the teachers might discuss this and decide what they would like to share, regarding progress, experience, teaching ideas, content development and so on. Salodina can coordinate wiki training and the Ministry can also request follow up L4C training from COL.

One idea would be for a page to be created under the OLPC Nauru page, for each participating school. The teachers could then manage these pages as school projects with associated educational activities linked to the page contents. With the Internet access that is available, the schools can create their own websites using the laptops.

## **References**

The previous report and other information is given on the following OLPC Oceania pages (case sensitive):

- OLPC Oceania [http://wiki.laptop.org/go/OLPC\\_Oceania](http://wiki.laptop.org/go/OLPC_Oceania)
- Nauru pages [http://wiki.laptop.org/go/OLPC\\_Nauru](http://wiki.laptop.org/go/OLPC_Nauru)
- Teacher training strategy [http://wiki.laptop.org/go/OLPC\\_Oceania/Teacher\\_Training](http://wiki.laptop.org/go/OLPC_Oceania/Teacher_Training)
- Teacher training guide [http://wikieducator.org/OLPC\\_Oceania](http://wikieducator.org/OLPC_Oceania)
- Report of Wikieducator training  
[http://www.wikieducator.org/Learning4Content/Workshops/Face-to-Face\\_schedule/L4C6](http://www.wikieducator.org/Learning4Content/Workshops/Face-to-Face_schedule/L4C6)

## **Annex 1: “Expectations, hopes and fears” of training participants**

Feedback from participants

To be transcribed.

## **Annex 2: Examples of content created by teachers during training**

To be added

## Annex 3: Example of Objectives and Evaluation Framework

The framework below is from the Solomon Islands. Nauru can develop their own, using this as an illustration.

Objectives	Expected outputs	Indicators and instruments (how it is measured)
Awareness raised about OLPC and the objectives of the trial in Western Province	Ministry, teachers, sector partners and communities aware of: The vision of OLPC The function of OLPC/XO/XS Objectives trial in the Western Province.	<ul style="list-style-type: none"> <li>● Consultation and briefing meetings held with the Ministry, schools and communities</li> <li>Interviews and survey</li> </ul>
To assess the impact of OLPC in the area of Teaching and Learning  (In each sub-sector: Early Childhood, Primary, Secondary, TVET)	<ul style="list-style-type: none"> <li>● The XO is used in T &amp; L at schools and centres</li> </ul> <p>The XO is utilised in particular for some of the subjects</p> <p>The XO is integrated into normal/formal T &amp; L-formal education delivery</p> <p>Teaching methods are affected positively through the use of the XO in T &amp; L, including more/improved:</p> <ol style="list-style-type: none"> <li>(a) Learning by Doing</li> <li>(b) Child-focused teaching</li> <li>(c) Group work/sharing/collaboration</li> <li>(d) Inclusion / engagement of all students</li> <li>(e) Curriculum changes as a result of the XO/OLPC project</li> <li>(f) Impacts seen in all sub-sectors, but mostly with early age education (ECE and PE)</li> <li>(g) Also assess any possible negative or non-impact; learners and teachers not using XO or only after school hours</li> </ol>	<ul style="list-style-type: none"> <li>● Interviews and surveys with school managers, teachers, students, students, community members</li> <li>Teacher log books/diaries</li> <li>Class observations</li> <li>Demonstrations by teachers about the workings of XO</li> <li>Increased use of XO by learners in formal lessons and after school hours</li> </ul>
To assess impact of OLPC on enrolment or attendance	Increased enrolment or improved attendance at selected schools compared to schools where OLPC or XO has not been introduced	<ul style="list-style-type: none"> <li>● Attendance register</li> </ul>
To assess impact of OLPC or XO in delivering/producing new curriculum materials/learning content	<ul style="list-style-type: none"> <li>● New electronic content made available (in schools)</li> </ul> <p>The school server is an effective source of content</p> <p>'Wiki Educator' more frequently used</p>	Materials provided by School Ministry/curriculum NGOs / partners of education sector OLPC Oceania / SPC
To assess if OLPC/XO-technology is technically feasible and sustainable	<ul style="list-style-type: none"> <li>● Teachers and students are able to use and continue to use the laptops</li> </ul> <p>Power supplies are feasible , affordable</p> <p>Good quality Internet connectivity</p> <p>Required level of technical support, maintenance is available</p> <p>XO-Equipment is reliable, functional and still working</p> <p>Interviews, consultations and surveys</p>	<ul style="list-style-type: none"> <li>● Demonstrations by students, teachers</li> <li>Technical report on power and connectivity infrastructure</li> <li>Options, performance, cost,</li> <li>Number and type of equipment failures</li> </ul>
To assess impact of capacity building for teachers (and learners) in the OLPC project	<ul style="list-style-type: none"> <li>● Training (for XO) has built sustained capacity</li> </ul> <p>Training system/schedule and methodology is effective</p> <p>Teachers are able to integrate the use of XO in formal and informal class-work</p> <p>Teachers have improved access to resources and training support</p>	<ul style="list-style-type: none"> <li>● Interviews, consultations and surveys with trainers, teachers and learners</li> <li>Evaluations of training, capacity building</li> </ul>
To assess the impact of OLPC on the learning, and school environment	<ul style="list-style-type: none"> <li>● Teachers and students regard the XO and OLPC project positively</li> </ul> <p>School seen more positively by the</p>	<ul style="list-style-type: none"> <li>● Interviews, consultations and surveys with teachers, learners and community</li> </ul>

	<p>community</p> <p>Teachers have improved morale</p> <p>Absenteeism under teachers and learners is reduced</p> <p>Higher demand / enrolment / retention (teachers and students)</p>	<p>members</p> <p>School records, minutes of school board/committee meetings</p> <p>Public meetings</p> <p>Parents meetings</p> <p>Inspectorate visits</p> <p>Note: OLPC/SPC will provide advice on survey instruments/questionnaires/inspections</p>
<p>To assess the impact of OLPC, XO's on the community</p>	<ul style="list-style-type: none"> <li>● To assess the impact of OLPC, XO's on the community</li> </ul> <p>Also community members involved in the use of XO's</p> <p>Community regards the OLPC positively or negatively</p> <p>Community have improved access to information and communication services</p> <p>More involvement or active participation of parents in the school</p>	<ul style="list-style-type: none"> <li>● Interviews, consultations, surveys with community members, teachers, learners</li> </ul> <p>Minutes of school committees and boards</p> <p>Group interviews with community members</p> <p>Demonstrations of parents using these XO's</p>

## **Annex 4: Framework developed in Niue for integration of laptops into lesson planning**

The Principals of Yaren and Kayser Schools, with advice and support from the Ministry and SPC, can start to develop a similar framework. Initially it will be merely some milestones for the short, medium and longer term.

### **ECE / NPS OLPC PROGRAM – 2008**

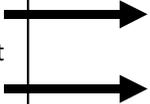
	<b>August</b>	<b>September</b>	<b>October</b>	<b>November</b>	<b>December</b>
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ECE	Familiarise children & Teachers with laptops – Turn on, Shutdown, Use functions. Set rules, routines and safety use of laptops.	<p>→</p> <p>- come out of programs using symbols ▣</p>	<p>Introduce and explore programs appropriate to children.</p> <p><u>memorize</u> (using sounds) single letters, single numbers</p> <p><u>puzzles</u> (hand &amp; eye coordination)</p>	<p><u>implode</u></p> <p>-critical thinking</p> <p>-try to get rid of as many blocks on screen</p> <p><u>sudoku</u></p> <p>-creating a pattern</p> <p><u>record</u></p> <p>-photo-take own photos</p> <p>-video-make video clip of ownself singing, dancing, telling story etc.</p>	<p><u>Tim tam Mini</u></p> <ul style="list-style-type: none"> <li>➤ Explore different soundz through listening games</li> <li>➤ Make own music with different instruments.</li> </ul>
Year 1		<p>Introduction to computer</p> <ul style="list-style-type: none"> <li>- How to handle computer</li> <li>- How to open -→Freechoice</li> <li>-How to turn it on →jigsaw puzzle</li> <li>-How to move the mouse</li> <li>-Click x → Speak</li> <li>-Choose programme</li> <li>-How &amp; when to change →Sudoku-maths algebra patterns</li> </ul> <p>↓</p>	<p>Identify symbols – keyboard</p> <ul style="list-style-type: none"> <li>➤ Memorize</li> <li>➤ Record</li> <li>➤ Colours / Paint</li> </ul> <p>↓</p>	<p>Keyboard</p> <ul style="list-style-type: none"> <li>- lower cases</li> <li>- upper cases</li> </ul> <p>Write</p> <p>↓</p>	<ul style="list-style-type: none"> <li>- Tam tam Mini</li> <li>- Record</li> <li>- Freechoice</li> <li>- Browse</li> </ul> <p>↓</p>
Year 2		<p>* Exploring</p> <p>RULES GAMES →</p>	<p>*Knowing the Functions</p> <p>RULES GAMES →</p>	<p>→</p>	<p>→</p>
Year 3		<ul style="list-style-type: none"> <li>- Reminding how to charge, and charge it only once in school.</li> <li>- to care and keep it safe</li> <li>-handle by you only</li> <li>- how to turn it on and select programme/shutdown.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Write</li> <li>➤ Browse</li> <li>➤ Memorise</li> <li>➤ Calculate</li> <li>➤ Free Choice</li> </ul>	<ul style="list-style-type: none"> <li>➤ Write</li> <li>➤ Browse</li> <li>➤ Paint / Colours</li> <li>➤ Calculate</li> </ul> <p>Free Choice</p>	<ul style="list-style-type: none"> <li>➤ Write</li> <li>➤ Browse</li> <li>➤ Calculate</li> </ul> <p>Free Choice</p>



ECE / NPS OLPC PROGRAM – 2008

	<b>August</b>	<b>September</b>	<b>October</b>	<b>November</b>	<b>December</b>
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Year 4	Independent activities – Chat – Tim Tam – Games and activities, memorize– create, play & share. (same as junior school)	<ul style="list-style-type: none"> <li>➤ Journal Writing</li> <li>➤ Write – record &amp; insert picture</li> <li>➤ Maths – Memorize – Create Play</li> </ul>			
Year 5		<ul style="list-style-type: none"> <li>➤ Journal Writing – alternate days/wks?</li> <li>➤ Chat</li> <li>➤ Writing -----&gt; (buddy writing) record &amp; insert picture</li> <li>➤ COI</li> </ul>			
Year 6		<ul style="list-style-type: none"> <li>➤ Write Expressive</li> <li>➤ Shared Writing</li> <li>➤ Guided Writing</li> <li>➤ Record and insert picture into stories</li> <li>➤ Browse Familiarise Internet</li> <li>➤ Find books for buddy reading</li> </ul>	<p style="text-align: center;">CONTINUE</p> <ul style="list-style-type: none"> <li>Tim Tam Music</li> <li>→ Listen, Create, Play</li> <li>→ Measure &amp; Calculate</li> <li>Maths – measurement unit</li> <li>→ Research for COI projects</li> </ul>		



**ECE / NPS OLPC GENERAL COMMENTS – 2008**

	Learning From the			
	Teacher	Students	Teacher-student	Student Teacher
ECE	<p>It's a great tool to have as a teacher/parent also very helpful to me and I explore heaps of activities.</p> <p>Very helpful and useful to me which I have learnt a lot.</p> <p>Very helpful to me, and able to use it. Need to learn how to get into other programmes.</p>	<p>They all love the tool, a great way to learn to persevere, patients, tolerance and explore beyond.</p> <p>Children enjoy and they explore different games and they love to record and play music.</p> <p>Children explore heaps of different games and there are particular games it's so useful to them.</p> <p>Some children are more advance and able to show teachers.</p>	<p>Children are very quick to learn b'cos they know they can practice &amp; practice over &amp; over.</p> <p>Teacher and children share what activities they know and how to use a lap top students also show teacher others activity.</p> <p>Teach children routines how to open and close their laptops and even teach them how to play games.</p> <p>Show children how to play some games and children who are still not so sure how to use the mouse.</p>	<p>I was amazed to learn new programmes from the children, that's the advantage of having your own laptop.</p> <p>Children show the teacher other games in the lap top.</p> <p>Some children show us some games to go and play.</p> <p>Some children show us how to go into games and other activities.</p>
Year 1	<p>Very helpful to the teacher.</p> <p>Teacher needs to practice before to students.</p>	<p>Students know better than the teacher.</p>	<p>Students as a Teacher.</p> <p>Teacher as a Student.</p>	<p>We are learning together for the new technology.</p>
Year 2	<ul style="list-style-type: none"> <li>- Typing Skills</li> <li>- Save work (keep)</li> <li>- Grammar</li> <li>- Rules</li> </ul>	<ul style="list-style-type: none"> <li>- Games</li> <li>- Music Videos</li> <li>- Chat</li> <li>- Helping Other Students</li> </ul>		
Year 3	<ul style="list-style-type: none"> <li>➤ Very useful to write their story, they can identify spelling mistakes.</li> <li>➤ Very open to contact the Teacher to learn how to go into a programme.</li> </ul>	<ul style="list-style-type: none"> <li>➤ They excess to maths activities, puzzles, in their own time.</li> <li>➤ Very occupy, finish work laptop no hassling in the room.</li> <li>➤ Extra learning to all of them.</li> </ul>	<ul style="list-style-type: none"> <li>➤ How to set a programme/topic and write in the laptop.</li> <li>➤ How to keep their journal.</li> <li>➤ Select programmes/algebra patterns.</li> <li>➤ Learning very slowly to transfer everyday routine work to write.</li> <li>➤ Reminding rules, safety, when</li> </ul>	

			<ul style="list-style-type: none"> <li>to charge.</li> <li>➤ How to go into implode.</li> </ul>	
Year 4	<ul style="list-style-type: none"> <li>➤ Enforcing good use of it, class routines in/out and when to use and be friendly with it.</li> <li>➤ Monitoring than implementing.</li> <li>➤ Trying to initiate <u>one</u> learning activity a week.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Enjoy</li> <li>➤ Busy</li> <li>➤ Fun</li> <li>➤ Sharing new learning</li> <li>➤ Play music and games</li> <li>➤ Keen, enthusiastic, sharing</li> <li>➤ Learning together</li> </ul>	<ul style="list-style-type: none"> <li>➤ Rules – safety use</li> <li>➤ Write activities –Record/Insert etc</li> <li>➤ Create games in Memorize</li> <li>➤ Set rules (orally)</li> <li>➤ Identify parts of laptop (eg charger)</li> </ul>	<p>Chat Music</p> <ul style="list-style-type: none"> <li>➤ Chat</li> <li>➤ Share when I am stuck where to go (next) step.</li> <li>➤ Fun games</li> </ul>
Year 5	<p>Ensuring that all children contribute to the routines of using the laptop so the well being of others is safe! There is no other way to stress the <u>looking after</u> of laptop. It's a daily routine of issues &amp; ☺ and its on the wall for reminding.</p>	<ul style="list-style-type: none"> <li>➤ <u>Cool</u></li> <li>➤ <u>Fun</u> to use</li> <li>➤ Learn while playing</li> <li>➤ Talk to others</li> <li>➤ Read and play with others</li> <li>➤ Teach others</li> <li>➤ Get to internet &amp; find stuff</li> <li>➤ Play games &amp; music</li> </ul>	<ul style="list-style-type: none"> <li>➤ Rules, Routines, Safety Class routines for laptop – charge times, - volume quiet zones</li> <li>➤ Write – buddy write by invite / join and add to writing &amp; giving feedback.</li> <li>➤ Journal / Expressive writing</li> </ul>	<ul style="list-style-type: none"> <li>➤ Chat-invite &amp; join and chat</li> <li>➤ Play a new game</li> <li>➤ Tam Tam Music-create piece of music</li> </ul>
Year 6	<p>Need to set routines well. After 2 weeks set routines are working well but still needs consistency. Writing in lap tops is incentive to write completed stories. Control noise level. Needing to work on one or 2 functions a week.</p>	<ul style="list-style-type: none"> <li>➤ Show keen interest in using laptops.</li> <li>➤ Likes to find new things in laptops.</li> <li>➤ Cool</li> <li>➤ Learn while using</li> <li>➤ Interact with other students</li> </ul>	<p>Write activities – buddy writing Chat – Invite/Join Record – Basic computer functions Rules / Routines / Safe Browser – Use</p>	<ol style="list-style-type: none"> <li>How to * change name * download stuff from flash-laptop</li> <li>Down load games from the terminal Play new games</li> </ol>