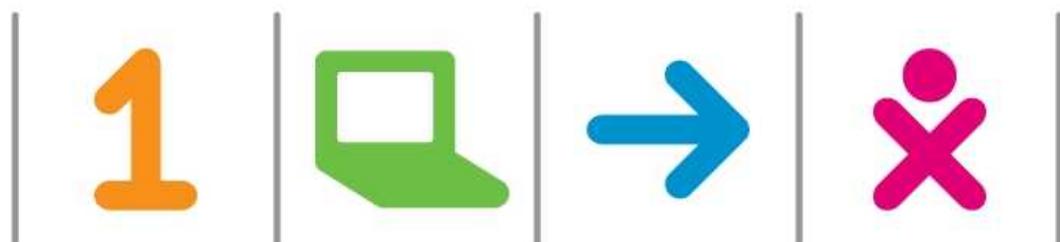one
laptop
per
child

Information on the OLPC and the "XO" laptops

http://wiki.laptop.org/go/OLPC_Oceania

(case sensitive)

http://laptop.org

The 5 core principles of OLPC

1. **Child ownership.** The impacts on the child's learning will be so much greater if they are always immersed in the experience and always have access to a laptop. Also, compared to a traditional computer lab, the laptop stays with the child and all their family will benefit and be better able to participate in the information society.

2. **Low ages.** Both hardware and software are designed for elementary school children ages 6-12. Children do not need to read or write to use them, in fact the laptops help them to read and write. In the Solomons, 5-7 year olds are using them and have acquired very good skills in just a few weeks. The software particularly helps children in learning literacy, numeracy and in acquiring life-long learning skills such as collaborating with others, learning-by-doing, and in feeling that they are included and important (self esteem). These impacts will be greatest at an early age. The target ages correspond therefore with elementary and primary schools.

3. **Saturation.** For a truly inclusive learning environment to me established in a school classroom, every child and the teacher must have a laptop. If we only have some with laptops, it creates a divide and some are excluded.

4. **Connection.** The laptops connect with each other wirelessly, and all the activities on them are enabled for "sharing" – or collaboration. Anything the child does on them can be done together with others, as a learning experience. The laptops can also access the global Internet, if available, and a special School Server has been created where we can store masses of locally created and relevant educational resources, including electronic curriculum materials.

5. **Free and open source**. The laptops have been developed in a truly open and collaborative environment based on the Open Source movement. It is therefore the case that children are able to go deeper into the laptops as they learn, and even change and improve the activities. There is a massive global (and regional) community that is working together to develop the laptops and support local languages, local content development and in other areas. The teachers, educationalists, people producing learning materials, and importantly the children themselves, are empowered to join in these communities and participate in these developments.

Education Approaches of an OLPC Project

A core element of the OLPC program, as opposed to the tool of the laptop, is "Learning learning". The OLPC laptops (called the "XO" laptop) are not office productivity tools like Windows computers, but instead are "learning tools" that help young children to learn.

The OLPC program is based on the Constructionalist Education theory, or learning by doing. It is also has a strong collaboration learning approach, encouraging students to share their experiences and learn together.

Some Education ministries are reforming their system to a more student centric approach to replace the teacher centric or instructional approach. PNG policy includes the use of the vernacular as a language of instruction at elementary schools. This can be assisted by the laptops, as their operating systems and speech synthesisor can be translated into any local language – assisted by the open development community.

Generally there is a strong belief that the education system needs to change and with today's affordable technology, especially the OLPC Laptop and Internet, the tools are available. The status quo for education in developed and developing countries is not acceptable.

Several OLPC projects are driven by the need to reform the education system. For example, Peru had tried many times to make incremental changes to their underperforming system with no success. Today, they find the Laptop and Internet are transforming the system very effectively.

The degree to which Learning by Doing is being incorporated in the classroom might be the basis of an evaluation framework. For instance, in the Solomons, Learning by Doing is a theme that is being introduced into the primary school curriculum. Such an indicator would be directly linked to policy, as well as to the design characteristics of the XO laptop.

It is up to each country to design such a framework for evaluation, according to their own priorities and policies.

The list

Here are some things that have been mentioned as positive outcomes from an OLPC project. Many of these observations come very early in the project. This list could also be considered reasons for launching a project.

1. Reduced absenteeism
2. Greater engagement by children
3. Empowerment of teachers
4. Increased esteem of teachers
5. Reduced need of discipline
6. Less disruption by students
7. More "Learning by Doing"
8. Increase in self esteem by students
9. Increased "connection" with the world (other cultures, languages, ideas)
10. Increased involvement by parents
11. School becomes the centre of the community
12. Development of a sharing culture (child to child, school to community, teacher to parent)
13. Much better results than with Computer Labs
14. The whole community becomes empowered, through access to the information society

One thing that is emphasized in many projects is that the process of running the project is, in itself, a learning exercise. The best results come from an open approach to experimentation (learning by doing)

Many teachers comment that children instinctively recognize the value of the laptop, even when the teachers (and education specialists) are sceptical.

More information

- http://wiki.laptop.org/go/OLPC_Oceania
  Click the Solomon Islands page for some leading experience from one member country

- http://www.laptop.org

OLPC is based on constructionist learning theories pioneered by Seymour Papert, Alan Kay, and also on the principles expressed in Nicholas Negroponte's book Being Digital.[13] These three individuals plus the several sponsor organizations are active participants in OLPC.

RICS

The OLPC and Rural Internet Connectivity System (RICS) programme of SPC are highly complementary. The RICS system enables any rural community to have full and safe Internet connectivity (it is also protected from inappropriate use by a filter). It is highly recommended that both programmes are coordinated in PNG.

Constructivism (learning theory)

The below is from

http://en.wikipedia.org/wiki/Constructionist_learning

Constructionist learning is inspired by constructivist theories of learning that propose that learning is an active process wherein learners are actively constructing mental models and theories of the world around them. Constructionism holds that learning can happen most effectively when people are actively making things in the real world. Constructionism is connected with experiential learning and builds on some of the ideas of Jean Piaget.

Seymour Papert defined constructionism in a proposal to the National Science Foundation entitled Constructionism: A New Opportunity for Elementary Science Education as follows: "The word constructionism is a mnemonic for two aspects of the theory of science education underlying this project. From constructivist theories of psychology we take a view of learning as a reconstruction rather than as a transmission of knowledge. Then we extend the idea of manipulative materials to the idea that learning is most effective when part of an activity the learner experiences as constructing a meaningful product."

As Papert and Idit Harel say at the start of Situating Constructionism, "It is easy enough to formulate simple catchy versions of the idea of constructionism; for example, thinking of it as 'learning-by-making'. One purpose of this introductory chapter is to orient the reader toward using the diversity in the volume to elaborate—to construct—a sense of constructionism much richer and more multifaceted, and very much deeper in its implications, than could be conveyed by any such formula."

Papert's ideas became well-known through the publication of his seminal book Mindstorms: Children, Computers, and Powerful Ideas (Basic Books, 1980). Papert described children creating programs in the Logo language. He likened their learning to a living in a "mathland," where learning mathematical ideas is as natural as learning French while living in France.

Papert has been a huge proponent of bringing IT to classrooms, as in his early uses of the Logo language to teach mathematics to children. Constructionist learning involves students drawing their own conclusions through creative experimentation and the making of social objects. The constructionist teacher takes on a mediational role rather than adopting an instructionist position. Teaching "at" students is replaced by assisting them to understand—and help one another to understand—problems in a hands-on way.

While constructionism has, due to its impetus, been primarily used in science and mathematics teaching (in the form of inquiry-based science), it is arguable that it developed in a different form in the field of media studies in which students often engage with media theory and practice simultaneously, in a complementary praxis. More recently it has gained a foot hold in Applied linguistics, in the field of second language acquisition (or SLA). One such application has been the use of the popular game SimCity as a means of teaching English using constructionist techniques (Gromik:2004).

Begininning in the 1980s, The Lego Group funded research in Papert's research group at the MIT Media Laboratory, which at the time was known as the "Epistemology and Learning Group." When Lego launched its Mindstorms Robotics Invention System in 1998, which was based on work in his group, they received permission to use the moniker "Mindstorms" from Seymour's 1980 book title. In Lego's Serious Play project, business people learn to express corporate issues and identity through the medium of plastic bricks -- another form of constructionist learning.

In 2005, Papert, together with Nicholas Negroponte and Alan Kay launched the One Laptop Per Child initiative to put constructionist learning into practice in the developing world. The aim is to provide $100 laptops to every child in the developing world.

The Five Principles of OLPC

Child Ownership

OLPC has created the XO laptop to be very low cost, robust and powerful, beautiful and friendly. It has been designed explicitly for children of the elementary classes, the first one of its kind. The ownership of the XO is a basic right of the child and is coupled with new duties and responsibilities, such as protecting, caring for, and sharing this valuable equipment.

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. A key OLPC asset is the free use of the laptop at home, where the child (and the family) will increase significantly the time of practice normally available at the standard computer lab in the school.

I wear my XO like my pair of shoes.

Low Ages

The XO is designed for the use of children of ages 6 to 12—covering the years of the elementary school—but nothing precludes its use earlier or later in life. Children don't need to write or read in order to play with the XO and we know that playing is the basis of human learning. Moreover those digital activities will help the acquisition of the writing and reading skills.

Every year a new cohort will be incorporated into the program. Accordingly the assessment of the OLPC program should be intrinsic to each cohort and every student will keep an individual portfolio or journal with the trace of his or her learning paths in the most diverse disciplines at school. In particular small children with learning, motor or sensory disabilities may use the computer as a prosthesis to read, write, calculate, and communicate.

I have good XO shoes for a long walk.

Saturation

The OLPC commitment is with elementary education in the developing countries. In order to attain this objective we need to reach a "digital saturation" in a given population. The key point is to choose the best scale in each circumstance. It can be a whole country, a region, a municipality or a village, where every child will own a laptop. As with vaccination a digital saturation implies the continuous intervention on the successive cohorts at the proper ages.

The whole community will become responsible of the OLPC program and the children will receive support of many institutions, individuals and groups of this community. Because of the connectivity inherent to OLPC these different communities will grow together and expand in many directions, in time and space. They will become solid and robust, because they are saturated, without holes or partitions.

A healthy education is a vaccination, it reaches everybody and protects from ignorance and intolerance.

Connection

The XO has been designed to provide the most engaging wireless network available. The laptops are connected to each other, even when they are off. If one laptop is connected to the Internet, the others will follow to the web. The children in the neighborhood are thus permanently connected to chat, share information on the web, gather by videoconference, make music together, edit texts, read e-books and enjoy the use of collaborative games on line.

The battery of the laptop can work for many hours and it can be charged in special gang chargers in the school or by mechanical or solar power. The unique XO display allows the use of the laptop under a bright sun, enabling the user to work outside the classroom or home, in the wild as well as in any public open place.

The connectivity will be as ubiquitous as the formal or informal learning environment permits. We are proposing a new kind of school, an "expanded school" which grows well beyond the walls of the classroom. And last but not least this connectivity ensures a dialogue among generations, nations and cultures. Every language will be spoken in the OLPC network.

When we talk together we stay together.

Free and Open Source

The child with an XO is not just a passive consumer of knowledge, but an active participant in a learning community. As the children grow and pursue new ideas, the software, content, resources, and tools should be able to grow with them. The very global nature of OLPC demands that growth be driven locally, in large part by the children themselves. Each child with an XO can leverage the learning of every other child. They teach each other, share ideas, and through the social nature of the interface, support each other's intellectual growth. Children are learners and teachers.

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 re-purposed in the future.

A world of great software and content is necessary to make this project succeed, both open and proprietary. Children need to be able to choose from all of it. In our context of learning where knowledge must be appropriated in order to be used, it is most appropriate for knowledge to be free. Further, every child has something to contribute; we need a free and open framework that supports and encourages the very basic human need to express.

Give me a free and open environment and I will learn and teach with joy.

Starter Ideas for use of OLPC Laptops in Classrooms

Here are some basic ideas of OLPC activities that may help in the classroom

Firstly, there is information about using the laptop on the laptop. Open **Browse** and go to …………..

You can also go to the Laptop web site using **Browse** to find out much more information. Go to wiki.laptop.org

1. Literacy improvement
   a. Reading skills – Go to **Browse** and find **e-books**. There are many good children's books here, but more can be found on the Internet as well.
   b. Spelling/Grammar/numbers – Use **Speek**. This encourages typing skills and improves spelling as the children can hear of the word is not spelt correctly. It also helps grammar. Ask the children to make a conversation with each other. One child can ask "What is 8+9". The other can answer "17"
   c. Story writing – Go to **Write** and ask the children to write a story. They could also take a photo of something relevant and past it into the document
   d. Writing – Ask the children to **Chat** about a story they have read or a project they are working on. This will improve their writing and typing skills.
   e. Letters – Use the **Memory** letter game to identify letters. This can be a shared activity with two children playing to see who get the most correct answers.
2. Numeracy
   a. Addition – Use the **Memory** numbers game. Can be shared.
   b. Addition/multiplication etc – Use **Calculator** to do sums.
   c. Distance – Use the **Measure** activity to show distances. See who can guess the distance
3. Art
   a. Drawing – Use **Paint** to draw and colour. Children can draw their friend and make the clothing the right colour. Hold a drawing competition for the best drawing of something they are studying at school
   b. Drawing - Find drawings and photos on the Internet and change them. Share drawings with other children in PNG and overseas
   c. Moving drawings – Use **Turtle Art** to make drawings move
4. General. There are lots of good places to find teaching materials. Here are some
   a. Solomon Islands School Net here
   b. PNG Ministry of Education (not available yet)
   c. University of PNG
   d. Divine Word University
   e. University of South Pacific –Multi media study here
   f. Australian Ministry of Education
   g. New Zealand Ministry of Education
   h. UNESCO, ASEAN School Net here
   i. Commonwealth of Learning
   j. eXeLearning here
   k. Intel Skoool.com here
   l. SPC material