

Q & A

Questions from Developing Countries About the \$100 Laptop

Seymour Papert, professor emeritus at the Massachusetts Institute of Technology's Media Lab and adviser to the One Laptop Per Child project, answered questions in a USINFO webchat about some obstacles for the device's operation in developing countries. Papert, one of the early pioneers of artificial intelligence, says, "If you think about people doing knowledge work (and knowledge work means anything to do with writing, or numbers or information), all the people in the world except children have opted to use the computer as the natural medium.

"If we want to bring the children of the world into the knowledge economy, knowledge society, the computer is the only means of doing that."

If I live in a country where I want to have these laptops, how do I get them? Does my government have to buy them or can each school buy them?

For the moment only governments can buy them. Commercial channels to obtain the same or similar machines will be developed later....We have to make this operation as simple as possible, and so to get started we can only deal with very large orders. So the easiest way was to have governments that were willing to order a million of the machines at a time have the first priority.

How do you intend to sustain the use of these laptops in our schools, due to the fact that we experience erratic power supply chronically?

Two responses to the problem of erratic power:

- Very low power consumption to operate longer on the battery.
- A human-powered generator (like wind-up radios) to supplement the battery.

This is a fantastic idea, but what about tech support? Surely the computers—hardware or software—might go haywire at some point.

I believe in "kid power." Our education systems underestimate kids by assuming they are incompetent. An eight-year-old is capable of doing 90 percent of tech support and a 12-year-old 100 percent. And this is not exploiting the children: It is giving them a powerful learning experience.

Will the \$100 laptop include educational software?

A deeper answer to the question is that the software that is really educational is not software made especially for children.

A Web browser is educational software

because it lets people of any age get to information. A simple programming language like LOGO or Squeak is educational software because it enables people of any age to get the experience of mastering the computer.

What is to prevent these computers from reappearing in local markets or being misused by governments and corrupt officials? Are there safeguards?

We are doing our best to make computers available to all the children of the world. The machines are safeguarded in many ways against being stolen, but in the end, if the governments don't protect them, there is nothing we can do. One protection against theft is that these computers will not look like any other computer. And because they are only sold to governments, if anybody has a stolen computer it will be obvious to everybody watching.

Who pays for the Internet itself in poor countries?

The computers will have local networking built into the computer so that all the computers in one town or village will talk to one another and communicate with the school, without going through the Internet. So local communication will be free. Nobody will have to pay for it. Connection to the Internet is something that is beyond our control.

How closely does the OLPC concept mesh with your ideas about how children learn? Moreover, given the focus on child-centered learning, or "doing," what is the role of the classroom and the teacher in an OLPC nation?

The OLPC concept meshes with the idea that children can take charge of their own learning.

Making videos, communicating, creating their own programs, our children will take charge of knowledge. I believe that having the individual computers—each child owns a computer and has it all the time—is the only way we can empower really learner-centered learning.

The role of the teacher is to become a co-learner. Eventually, teachers, that is to say, adults with experience of learning, will join with children in learning new materials that neither of them has known in the past.

And this is the best way to learn, to learn with somebody else who is already experienced.

If you plan to provide laptops to the children of the world you need huge financial support. Who is the sponsor?

The rich countries of the world ought to be providing laptops for every child in



the world. In any case, my vision is that a laptop computer will become so inexpensive that every country will be able to afford to give them to the children.

Whom in the different governments would one contact to find out about who is getting these computers?

The Ministry of Education should know. If you cannot get information there, post your e-mail and I'll try to get it for you.

What plan does OLPC have for recycling these \$100 PCs after they break or become obsolete?

We're seriously worried about the environmental issues, but we cannot solve everything at once.

It is better to have computers out there in the hands of the children than to sit and worry about how to solve the disposal problem before they go there.

Are children getting laptops for free or do you consider that \$100 is not a lot of money and everyone can afford it?

The governments who have been discussing this with OLPC have discussed it as part of a plan to give the computers free to children. The way I think about the cost of the computer is that if a \$100 computer can last for five years, that's \$20 a year.

In a few years, we'll make a \$50 computer that will last for 10 years and that's \$5 per year, and every country can afford to give that free to its children.

How will teachers and students be trained on using the laptop?

There are tens of millions of people in the world who bought computers and learned how to use them without anybody teaching them. I have confidence in kids' ability to learn.



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