

## Will OLPC laptops bootstrap Latin American education?



Morgan G. Ames  
[sxsw@morganya.org](mailto:sxsw@morganya.org)

Thank you so much, Glenda, for including me in this fantastic panel. Today I am going to talk about One Laptop Per Child in South America.

I recently returned from six months of fieldwork in Paraguay and I welcome your thoughts on this preliminary analysis. Since we don't have a chance for questions here, please chat with me after the event or email me later at [sxsw@morganya.org](mailto:sxsw@morganya.org).

The OLPC concept measures with the idea that children can take charge of their own learning ... each child owns a computer and has it all the time.

- Seymour Papert, USINFO Webchat interview, November 14, 2006.



If you're a technologist in America today, chances are you've heard of One Laptop Per Child. The program was announced with much fanfare in 2005 by MIT professor Nicholas Negroponte, and for the next couple of years was the pet project of Silicon Valley. OLPC went on to design this laptop for children, with open-source software, from scratch. One of the most important facets of this program is that every child gets a laptop that is their property \*and\* their responsibility, and they have full access to it at all times, as this quote by OLPC advisor Seymour Papert illustrates.



OLPC's idea is that with this kind of access, children can be learning all of the time. During my fieldwork, I did see some amazing things – for example, one boy created this colorful wheel in Turtle Blocks. On the left here is a block of code, and on the right is the result of running this code. He was very proud of this because he said he wrote it himself.





But there's a problem. That example I just showed was an isolated example – optimistically, only about 2% of kids with OLPC laptops in Paraguay ever did anything like that, and even those weren't doing things like that all the time. I have been researching and writing about One Laptop Per Child for the last four years, and I recently returned from six months of anthropological fieldwork in Paraguay, and what I have found is not nearly as encouraging.

Just to give you a sense of what fieldwork entails, during a typical week I spent 2-3 days observing classrooms and conducting interviews, and the rest of my week in the offices of Paraguay Educa, writing up fieldnotes and planning. Overall I conducted 132 interviews with students, parents, teachers, principals, tech support, and others involved with this project. I also collected and am still in the process of analyzing usage metadata from the laptops as well as test scores and attendance data from the students. I corroborated my findings with two weeks in Peru and two weeks in Uruguay. In short, I'm in the middle of processing a lot of qualitative and quantitative data from on the ground.



I don't want to place too much on OLPC, but if I really had to look at how to eliminate poverty, create peace, and work on the environment, I can't think of a better way to do it.

- Nicolas Negroponte (2007), Youtube video posted by OLPC Foundation

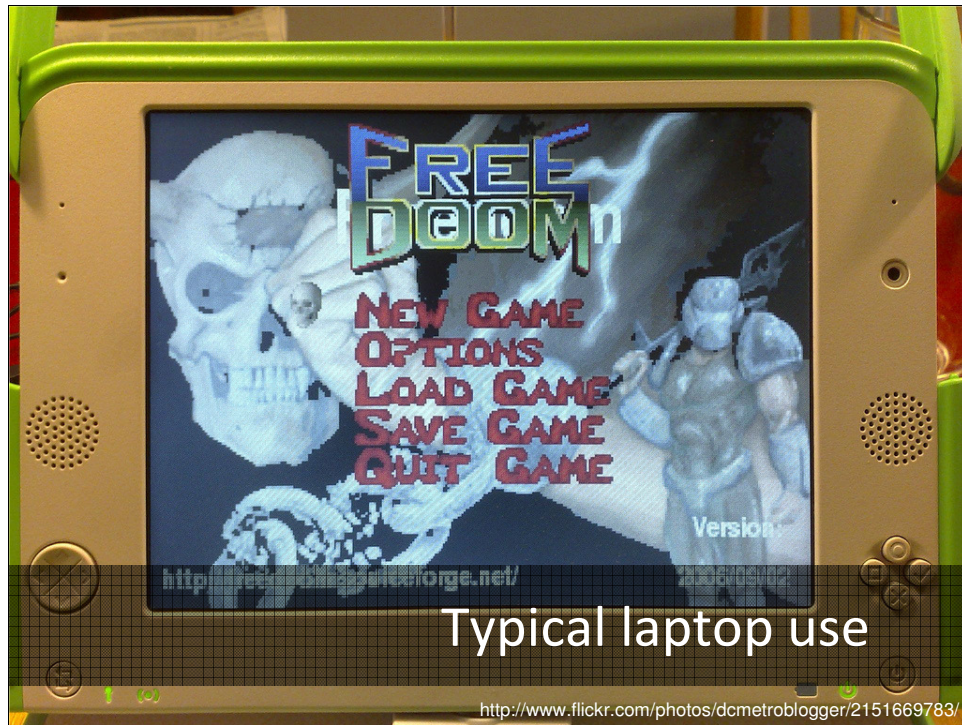
Why isn't it working? Back in 2007 and 2008 when these laptops were being marketed to governments around the world, the leaders of One Laptop Per Child, many of them also professors at the MIT Media Lab, were confident that all you had to do was hand out computers and children would just naturally take to them, surpass their teachers, and grow up to lead the economic development of their country, like this quote from OLPC founder Nicholas Negroponte illustrates. This is also the foundation behind Constructionist learning theory, developed by MIT professor Seymour Papert, which inspired the project in the first place.



But if you do just hand out laptops, which is basically what they did in Peru, what you end up with is a lot of laptops up on shelves, not being used in the classroom \*or\* at home. And this is what was happening in the first year of the Paraguayan program, until Paraguay Educa, the organization in charge of the deployment decided to change their strategy. Now, \*two\* years in, Paraguay has become a model deployment, described as one of the best in the world.

This is because after this first year, Paraguay Educa had all teachers complete 100 hours of training on the laptops over the summer so they were familiar with them. They also provided a full-time staff member in the school to help teachers integrate the laptop into the classroom. This integration is still not an easy thing to do. The school day in Paraguay is only 3 ½ hours long, and there are always lots of technical and logistical hurdles to get over in using laptops that take time to work out. But some teachers are using them, and some are doing very creative things with them.





But I mentioned that these kids had access to the laptops all the time, and this classroom use is a pretty small part of the day. OLPC said, in fact, that the best learning will happen outside of the classroom. So what are they doing the rest of the time?

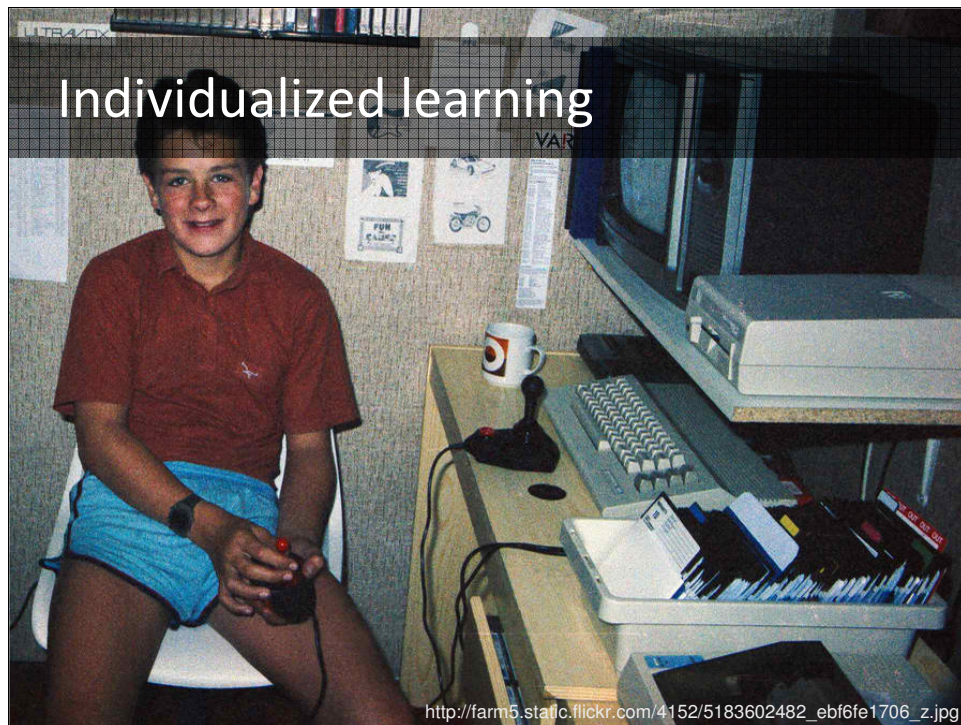
It turns out that kids in Paraguay and elsewhere in South America have many of the same interests as kids in the United States. When their use was unregulated, they spent most of their time on the laptop playing videogames and downloading music. And this includes the 2% that were sometimes doing more creative things – much of the time, their use was more like this. While the XOs weren't designed to be media machines – most models in use only have a 1GB hard drive – there are plenty of old-school games, like Doom and Super Mario, that run just fine, and they're hugely popular. Sites like XO-planet.com and XO-juegos.com were ubiquitous.



Worse, about 25% of the laptops in both Paraguay and Uruguay are broken. Here's a picture of a cracked screen that I saw while shadowing the tech support team during my fieldwork. While OLPC did build their laptops to be robust, they're *\*not\** indestructible, and the balance between low-cost and rugged often seemed to err more on the low-cost side. Moreover, the idea that the laptops were indestructible meant that OLPC doesn't deal with repair parts, especially for smaller deployments like Paraguay. There, the resources for repair are really limited, but even in Uruguay, which does have lots of resources for repairs, about 25% are out of commission. Breakages do happen, especially with kids.

How could these experts on technology at MIT have been so wrong about what kids will do with laptops? How could they have thought that just handing out laptops could solve major educational and institutional problems?





In my research I found that both the laptop's design and Constructionist learning theory drew heavily on the project leaders' personal experiences, which they optimistically mapped onto millions of children around the world. Specifically, the design of this laptop and its software was strongly influenced by the stories its founders and leaders tell about their own childhood experiences with computers. Most of these stories follow a familiar form: a young child – usually a white, middle-class boy – is given access to a computer, teaches himself all of its intricacies over many hours of open-ended exploration, and he grows up to be a talented programmer. This is the model behind all of the books and articles about children and computers by Negroponte and his collaborator Seymour Papert, who developed Constructionist learning theory and strongly influenced the early directions of OLPC. These *do* seem like perfectly reasonable assumptions to make, given our focus on individual success in the United States. This kind of story is *incredibly* common in the tech world, after all. But it's not how the world actually works.



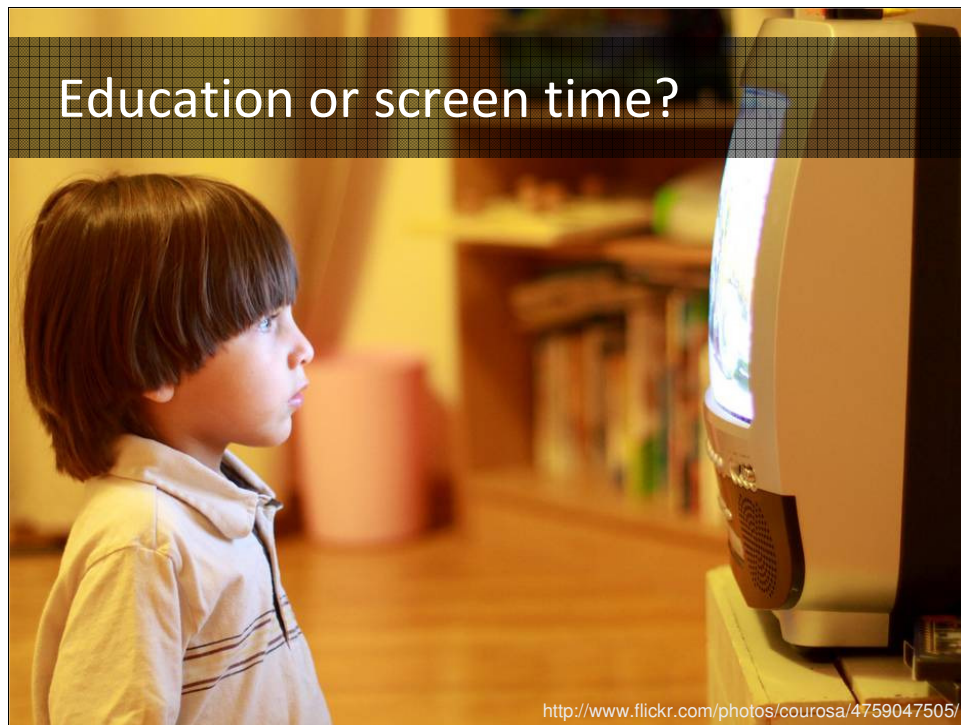
When you probe more you learn that, in fact, these talented programmers' fathers were often computer or electrical engineers. They had computer magazines at home. They had people they could talk to about computers. They often had a home environment that primed them for learning instead of passive consumption. It's telling that these kids were on the computer, back when the computer was much more limited than it is today, instead of watching TV like so many of their peers. And I find it fascinating that the social support that this environment no doubt provided is so often discounted or entirely ignored. These hackers are mythologizing their own childhoods based on the overly individual-focused worlds they live in, and now they're using those myths to promote an overly individualistic alternative to traditional education around the world.

## Mythologizing computer use



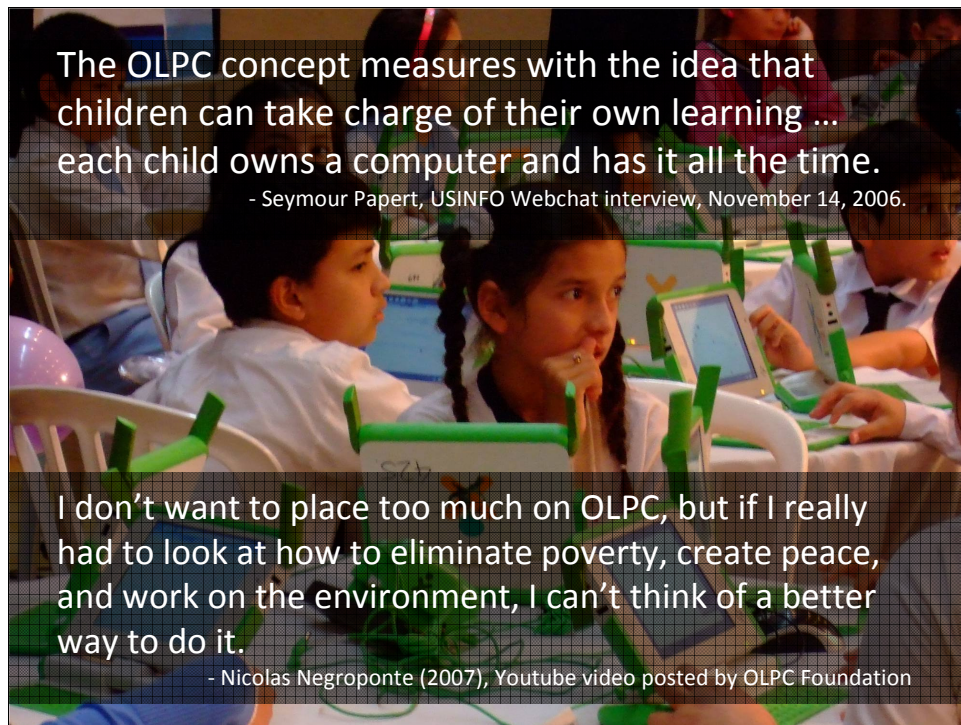
It's also a very utopian solution, mythologizing the value of computer use more generally. Having kids on computers doesn't automatically mean they're learning. For example, this picture I showed at the beginning, which we could very easily idealize, was actually one kid downloading the game Super Vampire Ninja while two friends looked on. Given that television is also pretty ubiquitous in Paraguay, these machines are often adding another layer of media consumption for many kids.





Overall, the digital media landscape today is vastly different than it was 20 years ago, when many of today's hackers first encountered computers. Today, for many kids in Paraguay just like in the US, computers are just another source of media, like television-plus-plus, where you can call up videos, music, or games at will. According to various studies, the time that most kids do spend on computers is almost entirely taken up by playing games and visiting media websites, not, say, learning to program.

In fact, today computers are lumped in with TV and video games under "screen time," which the American Academy of Pediatrics recommends limiting to at most two hours a day in the name of children's well-being. In light of study after study linking too much "screen time" with any number of physical and social ills in children, it seems that the educational hope for computers is fading – much like the hope that past generations of techno-utopians had for radio, then television, then VCRs. It's not that computers \*can't\* be educational – after all, TV can be educational, too, in the right context – it's just that they're not \*automatically\* educational. Two hours a day at most is pretty different from the vision of unlimited access we talked about before.



Based on these observations, I want to return to these quote by OLPC leaders Papert and Negroponte and caution against making education an individual experience where everybody (in theory) has all the tools they need to succeed. This unfairly shifts the burden of failure from the “system” – a flawed educational model, a corrupt government, an unjust economic structure – to the individual. If they don’t succeed now, it’s their own fault. But these problems are too big for this individualism and techno-utopianism to solve alone. We have to have anthropologists and others on the ground, understanding what’s actually going on, and creating the kind of institutional support that Paraguay Educa has developed around the laptop to even have a chance of success.



So, will OLPC laptops bootstrap education in Latin America?

Morgan G. Ames  
sxsw@morganya.org

In sum, the 2% doing interesting things with their laptops won't automatically become the founders of the next Google. We really don't know what they'll be doing in ten or fifteen years. My main takeaway is that OLPC isn't going to bootstrap Latin American education by itself. It's not that there aren't really interesting things happening, but as we saw with the contrast between Paraguay's OLPC program now and Paraguay's first year -- or Peru's OLPC program still -- there aren't shortcuts to good education or economic development, as much as we would like there to be. Techno-utopianism doesn't work, but sustained institutional support does.

Thank you, and I welcome your thoughts and feedback after the session or over email.