A Social Analysis of One Laptop per Child in Paraguay

Morgan G. Ames
Intel Science and Technology Center for Social Computing
University of California, Irvine
cscwlatinamerica@morganya.org

A Social History of OLPC
One Laptop per Child (OLPC) represents one of the largest experiments in laptop-driven learning currently underway. About two and a half million of OLPC’s “XO” laptops are in use around the world – 85% of them in Latin America – and it has inspired derivative projects in both education and low-cost computing. OLPC and the educational philosophy that inspired it, constructionism, both products of the MIT Media Lab, frame themselves as a radical break from unchanging educational tradition. OLPC’s XO laptop is the first of its kind to combine a rugged design, an open-source educational software suite, and full – if intentionally underpowered – computer functionality.

The ideas that OLPC’s early leadership had about childhood and learning determined a number of features of the XO laptop and the constructionist learning model. In particular, many involved or interested in the project, including MIT professors and OLPC founders Seymour Papert and Nicholas Negroponte, have stated that they were inspired to work on OLPC based on a nostalgic rendering of their own childhoods – specifically, the narrative of rejecting traditional education and teaching themselves how to program a computer. The ubiquity of this narrative across the technology industry bolstered the OLPC’s enormous popularity in its early years [1]. I interrogate the ideas that the best learning is playful and self-directed and the best machine for learning – or “tool to think with” in Papert’s terms – is a computer like ones OLPC’s developers themselves used as children. In the process, I also explore the specific conception of ‘childhood’ upon which constructionism and OLPC rest [2]. These powerfully important ‘mythologies,’ present not just among OLPC developers but in technological circles more generally, had material effects in guiding the design of the laptop and decision-making about the priorities of the organization.

OLPC in Paraguay
Against this backdrop, I then ask: what does child-driven, child-centered laptop use really look like? To answer this question, I conducted seven months of ethnographic fieldwork of a medium-size project of 4,000 XO laptops in ten schools (since increased to 10,000 in 36 schools) in Paraguay in 2010 and 2013, and offer three case studies of how the children I observed made sense of the laptop in their everyday lives. In 2010, the largest proportion of students – approximately two-thirds – hardly used the laptops at all, some of them from lack of interest and some from laptop breakage [10]. Most of the rest of the children

...
were interested in retrofitting a machine originally designed to teach programming to enable media consumption instead. This media-centric use may be the most important legacy of the OLPC project, and the disjuncture between OLPC’s vision and Paraguay’s reality may indicate a larger shift in the meaning of computers, from the programming machines of the 1980s to their present mainstream use for media consumption [3]. This shift echoes the path that other technologies, from radio to cable television, have taken as early technological idealism made way for consumer-oriented realities [9]. In fact, OLPC is but one of a continuous stream of educational reform efforts, some of which have been successfully integrated into the classroom and others tried and abandoned [11].

Finally, a very small proportion of students – generously about one percent, or 40 of the 4000 students who had laptops during my fieldwork in 2010 – were using their laptops in more creative ways, more in line with what OLPC was imagining. One percent may seem like a paltry return on investment, but Paraguay Educa nevertheless lauds some of these children – especially the boys – as natural geniuses. However, I problematize the common story of the innately curious learner leapfrogging past teachers, parents, and peers to deeply engage with the machine. In interviews and field observations, I found that the families of every one of these children had, even prior to the laptop, steered them toward creative and critical thinking. It appears that these children’s motivation for doing these activities were less a product of individualized interactions between a universalized ‘child’ and a Protean laptop, and more a negotiation between many actors, especially parents and peers [4].

Overall, laptop use was not individual but deeply social for the children I observed, whether ‘use’ involved creating games, watching movies, or rejection. OLPC’s central concept of the self-taught learner, drawing as it does on mythologies based in American individualism, techno-libertarianism, and childhood nostalgia, discounts the critical role that various institutions – including peers, families, schools, and communities – play in shaping a child’s educational motivation and technological practices.

Paraguay Educa, the non-governmental organization that distributed the 10,000 laptops in Paraguay, put in significant work to train teachers, provide classroom support, develop curricula and software, and repair the constant stream of broken XO laptops [10]. Some teachers also put significant work to fit laptop use – with all its problems of broken machines, drained batteries, and uninstalled software – into an already short school-day. Even when incentives were aligned to promote classroom use, however, most teachers did not adopt OLPC’s and Paraguay Educa’s view of the laptop as a constructionist learning device. The most-used activities in the classroom were those that were easiest to integrate into existing lesson plans, especially the web browser. To teachers, like students, the XO was charismatic not because it could teach programmatic thinking, but because it was a portal to the Internet. Moreover, almost all teachers who used XOs in the classroom straightforwardly replaced parts of blackboard-paper lessons with the laptop because it allowed the one quarter of students whose laptops were broken and the additional students whose laptops ran out of power or were misconfigured to substitute their paper notebooks instead [5].
Despite these complications, the laptop did embody various dreams of educational and economic reform for the next generation of Paraguayans. Each group involved with the deployment had various opinions about and hopes for the project, from vague hopes of preparing for the digital age to specific ideas for participating in online forms of governance and civic participation. Given these hopes, it appears that the power that the XO possessed in Paraguay came not from the messy material realities of the laptop-in-use, but from the kinds of desires that the laptop-as-symbol was able to fabricate.

OLPC in Context
The symbolism OLPC’s XO laptop in Paraguay takes on a different valence in light of the social history of technological adoption, adaptation, and innovation across Latin America [7]. The project’s tensions around how technology is adopted, and on whose terms, have previously surfaced in other projects across Latin America. Medina’s [8] account of the negotiations between local actors and international ‘experts’ over the utopian visions of a cybernetic society in Chile bears resemblance to the negotiations between Paraguay Educa and teachers. Likewise, Kreimer and Zabala’s [6] discussion of the compelling ‘fictions’ around Chagas disease in Argentina have parallels in the charismatic stories that circulate about OLPC’s laptop in Paraguay and across Latin America. More broadly, the differences between “imported” and locally-developed meanings of OLPC’s laptop are yet another instantiation of Vessuri’s discussion of development versus dependency in early Latin American science and technology studies [7,12].

References