"Technology is the answer, but what was the question?": About policies of technology insertion in schools and curricular changes

Lunardi-Mendes, Geovana Mendonça
Santa Catarina State University
Email: geolunardi@gmail.com

Abstract
This paper discusses how in recent years the policies of technology insertion have become a constant agenda of education policies. Considering Brazil as a context, the paper presents the partial results of a series of investigations conducted by the author and her group that analyze how, in education policies, technology insertion, through specific programs as in 1:1 model, represent a change of ideas and curricular innovation at school. In addition, it discusses, based on the global education policy concept, the role of governments and states in the adoption of policies presented around the world. Therefore, this paper is organized in two sections: the first discusses the 1:1 Model in the context of education policies, and the second discusses the issue of curricular changes announced by these policies.

Keywords: Curricular changes; Education policies; Digital technologies; 1:1 model.

Introduction
The neo-liberalism I describe is often mundane and certainly not of a piece. Certainly I do not find it easy to condemn as a matter of course programmes and initiatives which offer access to education to children who otherwise have no opportunity to attend school. Also, as I say several times below, we as yet know little about ‘what is really going on’. Again this is a plea for more research so that we might be a little clearer about what we think. We are faced with deciding in ‘conditions of undecidability’ [...] as well as being positioned in all of this, being complicit, imbricated and compromised. (Ball, 2012, p. xiii).

The intriguing question that is the title of this text could not be more appropriate and representative in the times we live in when it comes to policies of technology insertion at school. The discourses about technology insertion appear as easy answers to questions that are sometimes very complex and difficult:

- How to improve the quality of public education?
- How to resolve discrepancies/gaps resultant from the access to technology?
- How to adapt schools to meet the challenges of contemporary society?

From the simplest to the most elaborated questions, in times of digital technology and social networks, the answer remains the same. It hangs on the ‘reforming’ and ‘modernizing’ school political idea that technology can always be a good answer, independently of the question. Associated with this, the contemporary demands, particularly the digital technologies, have been the main target of these ‘modernizing’ efforts.
As we have discussed elsewhere (Sossai, Mendes-Lunardi, & Pacheco, 2009; Mendes-Lunardi, Silva, & Sossai, 2013; Mendes-Lunardi & Sossai, 2013), the idea of school curriculum ‘upgrading’ for improvement of the school technological ‘apparatus’ has become constant in the discourse and agenda of education policies. ‘Fascination’ for new technologies is always reinvented and invades the school as Benito (2012, p. 13) states: ‘the new history of material culture is built in most cases from what Martin Lawn has called abandoned modernities, that is, objects that were once innovations’.

Drawing from the answer ‘more technology’, which is understood as relevant, in recent years, through different ways, the technologically advanced countries and developing countries have launched ambitious projects of technological changes for schools. As stated by Sancho (2009, p. 2), first as educational computing, then as Information and Communication Technology (ICT), applied to education, and today as e-learning, such projects and programs expect a high return in terms of performance improvement and student learning. As the goals of these projects are always the improvement of an existing reality, whether it is technological infrastructure or digital insertion, the ‘impertinent’ posture, suggested by Ball in the epigraph of this text, becomes a difficult task. How to ‘suspect’ policies that apparently suggest improvements and modify exclusion situations? How to inquire programs that apparently promise to intervene in situations that seem to need answers?

Starting from ‘technologies’ as a response, which seems to ignore questions and Ball’s alert, in order to keep investigating ‘the indecision conditions’ in which we are inserted, this paper aims to look into two issues: the 1:1 model in Education policies and the curricular changes and innovations envisaged by these policies.

The contributions presented in this text are the result of reflections produced by the research group ‘Observatory of School Practices’ (Observatório de Práticas Escolares - OPE) through dialogs of researchers and researches that compose the group. More specifically, it comes from two major researches (coordinated by the author and developed by the group) namely:

- **Connected classes**: Curricular changes and collaborative learning among schools of the program called One Computer per Student (PROUCA) in Santa Catarina.
- **Tablets, Computers and Laptops**: about policies, infrastructure and pedagogical aspects of the integration of new technologies in school.

Given a specific funding call, launched to study and contribute to the objectives of PROUCA, the ‘Connected Classes’ research had a two-year duration (2011/2013). During the first six months of investigation, we conducted an exploratory survey of the program situation in Santa Catarina, making documentation studies and establishing four schools to deepen the study, focusing on the early years of elementary school. In the first stage of the research, we conducted around 500 hours of exploratory observation, seeking to identify the way that teachers and students would use netbooks. In the second stage, we developed some of the work that aimed to build methodologies along with the teachers and students inside the classroom. During the field research period, interviews with managers, teachers and coordinators of the program were
also held, besides document analysis. The research was developed with the financial support of CNPq (National Council of Scientific and Technological Development), through a specific call, and its main feature was scholarships of all kinds in order to comprise a team that would also have the role of developing an applied research.

The second investigation, ‘Tablets, computers and laptops’, still in development, began in 2013 as a result of the research ‘Connected Classes’, as response to a call from the Observatory of Education/CAPES. The research aims to investigate the policies of technology insertion in Brazil, especially in the state of Santa Catarina, aiming the existing curricular changes at school. The research consists of a set of Doctoral and Master, Scientific research initiation and Basic Education scholarships, which develop subprojects linked to the goals of the main investigation project.

Thus, for four years, the group has been involved with this theme and investigating it, certain that such research agenda is just beginning.

**Educational policies and the 1:1 model: impertinent remarks**

As a starting point, we can situate the education policies of technology insertion within the demands coming from global policies that nation states are required to respond, arising from supranational agendas and a whole set of external forces to countries and their territories. As Hostins and Garay point out):

...these new influences and interests are indicative of changes in the material and discursive field of education policies on a global scale or in what Lingard, Creagh and Vass (2012, p. 315) call the ‘field of global policies’, which have significant implications on the definition of education policies in the country. (Hostins & Garay, 2015, p. 3).

In addition, Education as big business, or in Ball’s (2012) terms as ‘Global Education Inc.’, has transformed the very formulation of policies in education, consolidating enterprises that have been specializing in selling and exporting education policies, especially for peripheral countries that still need to solve their major education problems.

In this way the ‘game’ is set and it is up to us, field researchers, inquire about this reality through our research, responding to Ball’s alert. As the author explains it is not about being under suspicion, specifically in our case, policies that have turned public school into an even more public school, and have in some cases considered a repair policy character throughout a whole process of exclusion, explicitly assumed by the State in the form of laws and regulations and that, only recently, have made possible the access to education as a civil right and a State duty⁶. It is rather an attempt to understand how states and municipalities have responded to policies and curricular determinations that are often addressed to local actors by supra national forces and networks.

Municipalities, the smallest political entities of the Federation, before regulations and national guidelines, were obliged to choose the possible paths within their local realities, seeking to adequate the education systems to this new reality. In this way we must also say that it is in the municipalities where many agents work more intensely, in contemporary times, who have claimed the expansion and dissemination of education policies aimed at improving the quality of basic education, such as social movements, trade unions, NGOs and other
actors who come from the organization of civil society who are sensitive to the challenges of thinking and making public education. In addition to these local challenges, we cannot lose sight of Ball’s warning when he states that:

In education, policy transfer, policy colonisation and policy convergence are all being affected here, through the writing of policy, policy consultancy and recommendations, policy influence, the selling of management and improvement products, and the growth and spread of multinational service providers with standardised methods and contents at various levels of policy. New policy relationships and spaces and media are constituted and used to re-embed mobile policies and their attendant discourses in national territories. Concomitantly, public services are being redesigned or modernised [...] to meet the needs of the neoliberal state, although, at the same time, national governments, especially those of small and fragile states, may be experiencing a reduction in their capacity to steer their education systems [...]. Through all of this, and despite the interpretation and modification of policy products at national and local levels (which I have not attended to here) there is clearly now something we can call ‘global education policy’ – a generic set of concepts, language and practices that is recognisable in various forms and is for sale! (Ball, 2012, p. 115).

Mass distribution policies of equipment for education system improvement seems to be a good example. The 1:1 model was introduced to the world by Professor Nicholas Negroponte who along with the Professors Seymour Papert and Mary Lou Jepsen, with support from the Massachusetts Institute of Technology (MIT/USA), developed an inexpensive laptop with maximum value of $100.00. Enhanced the idea, the One Laptop per Child Program (OLPC) was founded, maintained by the One Laptop per Child Association (OLPCA), and the OLPC Foundation (OLPCF). The nonprofit Foundation led by Negroponte would raise funds from enterprises such as Ebay and Google, among others, as well as specific funding from the World Bank and the World Trade Organization (Veloso, 2014). The main objective of the Program and its subsidiary foundation, as can be seen on its website and in its information material7, is to develop, produce and distribute inexpensive laptops with specific settings, through the developing country program, contributing thereby to reduce the digital ‘gap’. In 2005, during the Davos meeting, Negroponte presented his proposal to world leaders and invited them to achieve a ‘global effort’ of universal access to technology, especially the internet. As Veloso (2014, p. 14) explains:

The OLPC Foundation is guided by five principles for the development of the project: 1) the child must be the owner of the laptop; 2) the laptops must be used by children between 6 and 12 years old; 3) there should be a ‘saturation of access’ in certain region; 4) there must be a connection to the internet among the laptops; 5) finally, the operating system code must be open and freely accessible, both for developers and users. The project of global reach involves countries and cities with the most diverse characteristics, such as Argentina, Brazil, Cambodia, Costa Rica, United States, Dominican Republic, Egypt, Greece, Libya, Nigeria, Pakistan, Peru, Rwanda, Tunisia, Uruguay, Thailand, Nicaragua, Nepal, Afghanistan, Gaza, among others.

Basically, in our point of view, what happened in Davos in 2005 was the movement described by Ball (2012). Negroponte sold to countries a ‘global education policy’. By turning the policy into a product that can be purchased from specific programs, such as the OLPC, we also have the transformation of nation states into consumers. That is what seems to be more serious to us.
Mobilized by the idea that such a program could produce development and educational improvements, nation-states ‘bought’ the program offered by Negroponte or developed their own initiatives based on this model. As Artopoulos correctly points out:

Technological dependence of the region could be a facilitator in order for NGOs, universities and multinational companies to have the capacity to successfully influence local governments. One Laptop per Child Association Inc., professors at the Massachusetts Institute of Technology and Intel Corporation are successful in Latin America but in Asia they do not quite generate empathy through their ideas to reduce the digital gap. Asian countries, particularly the giants China and India, have not adhered to these solutions. Latin American countries are prioritizing the ‘1:1’ solutions, which other regions of the world have decided not to adopt. In India, leading country in software development, there was an explicit decision by the Ministry of Education to avoid engaging in massive long-term investment, and even academics in this country have published research papers that argue against the implementation of programs 1:1 in densely populated developing countries (Pal et al., 2009). On the other hand, in developed countries there are skeptical opinions about the pedagogical benefits of Models 1:1. In Spain, there is no consensus about the benefits of such initiatives. In early 2011 the Minister of Education of Catalonia rejected the project 1:1 Autonomy (Alberich et al., 2010). Such decisions on policy management in education are preceded by a significant number of case studies of ICT integration without improvement in learning (Convery, 2009, Vigdor et al., 2010). This would lead us to a question: Are these decisions right? Is it good to rely on global initiatives such as Professor Negroponte’s OLPC project? Or is it better to take independent paths as India did that decided to design their own educational device? (Artopoulos, 2013, p. 65).

However, regardless of the route, it is clear the movement of global politics imposed on countries by transnational demands. PROUCA, launched in Brazil in the form of law (Law 12.249 of June 14th, 2010) was the Brazilian response to the demand created by Negroponte’s presentation. As PROUCA’s website states:

The OLPC project was presented to the Brazilian government at the World Economic Forum Annual Meeting in Davos - Switzerland, in January 2005. In June of that year, Nicholas Negroponte, Seymour Papert and Mary Lou Jepsen came to Brazil especially to talk to the President and expose the idea in details. The president not only accepted, but also established an inter-ministerial group to evaluate and present a report. After meeting with Brazilian experts to debate on intensive educational use of ICT (information and communication technologies) in schools, a partnership with FacTI (Information Technology Training Support Foundation) - FINEP (Funding Authority for Studies and Projects) - was formed for the solution validation of the OLPC organization originally proposed by MIT. In February 2006, FacTI called three more institutions to integrate the technical group and develop a study about the OLPC solution: CenPRA - Renato Archer Research Center; CERTI - Innovative Technology Reference Center Foundation and LSI - Technological Integrated System Laboratory. (Brazil, 2010a).

In addition, on the website we also find the information that in the first phase of the project, later transformed into a program, the computers were donated, among other companies, by OLPC:

For the experiment phase, called pre-pilots, three equipment manufacturers donated to the federal government three laptop models. Intel donated Classmate model for schools of Palmas/TO and Pirai /RJ. OLPC donated the XO model to schools of Porto Alegre/RS and São Paulo/SP. The Indian company Encore donated the Mobilis model for a school in Brasilia/DF (Brazil, 2010b).

We realize, therefore, the presence of multinationals specialized in the development of a technology designed to meet a particular education policy. Just
The mass distribution of digital technology has become a way by which the transformation of the nation-state into a major consumer is visible. That is why, currently, on the website of OLPC Foundation, the focus of distribution is a tablet, the simplest and cheapest possible in order to continue the project that aims to 'end the digital exclusion' and keep the States and customers.

However, these movements cannot be analyzed in a simple way. The Nation-states, as political actors, are trying to answer these demands by creating their own strategies. This was, for example, the Brazilian case. As mentioned in the document of PROUCA, the implementation of the use of laptops in the situation ‘one to one’, had as main goals: ‘[…] improvement of the quality of education; digital inclusion; insertion of the Brazilian productive chain in the process of equipment manufacturing and maintenance’ (Brazil, 2010b).

This triad of goals highlighted by Sarian (2012), among others, is significantly observed when, in an open bidding to select a company that would provide the equipment for the programs, Positivo was chosen (company with Brazilian capital that won the bid to disseminate their equipment in Brazil, installing, therefore, the ‘Brazilian productive chain in the process of equipment manufacturing and maintenance’) (Brazil, 2010b). This result, in addition to the direct gain (more than 90 million for the 300,000 computers of the second phase of the program), brought to the company the necessary know-how for their insertion in Latin America, as, for example, the company's entry into the neighbour country Paraguay.

Although the limitations of the equipment associated with the poor quality of the internet in some schools have been the main criticisms of the program in Brazil, it is worth noting the economical 'warming' spurred by a global policy. That is, as a local actor the government takes advantage of this need created by others to enhance its local demands. In addition, the way the government transforms the program announced by Negroponte into policy also deserves analysis.

Initially thought as a project and then assumed as a program, PROUCA can be considered an education policy through the set of programs and policy actions that compose it. The broadband project in schools, the teacher training program associated with PROUCA, among others, were actions developed by the government to make PROUCA possible.

Among many difficulties encountered, the relationship between the various entities of the federal state (Federal Government, states and municipalities), in a country with continental dimensions, as is the case of Brazil, made the project succumb. This is pointed out by the Ministry of Education (MEC) to an online journal:

The first conclusion that has been reached is the impossibility to attend 100% of the schools the way it was done. The Federal government cannot afford to centralize in 100% the management of such equipment. We concluded that MEC should support municipalities and states the wish to adopt this kind of policy. ‘They are the ones who are able to assess their own territory’, said the director of Educational Content Formulation of MEC, Monica Gardelli Franco. (MEC as quoted in Borges, 2013).
The dispersal of initiatives like, for instance, a call for researches that could assist in the project implementation and subsidies of various kinds to these research groups, as was the case of our research Connected Classes, the absence of national forums where such researches could be presented and discussed spawned a profusion of actions with no progress in the projects. Gradually, the Federal government stopped developing new actions related to PROUCA. Other programs began to be announced, for example: the distribution of tablets for High School teachers (Digital Education project - policy for interactive computers and tablets). At the same time, in schools, the inability to continue the maintenance made the computers obsolete. We witnessed an ‘abandoned modernity’ with laptops stacked in school warehouses, being donated or simply discarded due to the impossibility of maintenance.

In technologically developed countries, as in the case of the United States and Japan, the emphasis has been to discuss pedagogical work methodologies linked to the practice of Bring Your Own Device (BYOD)\textsuperscript{10}. Whereas, in countries like Brazil, policies of equipment mass distribution prevent us from discussing at greater length how schools can deal, for example, with cell phones and their infinite applications.

Moreover, in the case of 1:1 model, the mass distribution has become more important than the debate about the ‘pedagogical prescription’ that the model inserts: Is it really necessary a 1:1 ratio? What are the gains and losses of this pedagogical choice? What purposes is this teaching strategy most appropriate for? Our hypothesis is that digital insertion through the equipment distribution to children, and therefore the change in their cultural context, would be more relevant than the educational gains that a model of this nature could bring. By the way, some experts advocate this perspective, as is the case of Frey (2014), who talks about ‘non-educational’ gains. That is, the changes do not necessarily occur at school, but in the society through digital insertion. However, the unquestionable adhesion to this model seems to dispense important questions as Artepoulos points out:

Finally, we come to the fundamental questions, what will the usual teaching practices in Latin America be when the basic requirements of connectivity and equipment are solved? Will innovation of teaching practices allow a stable entry of digital devices to the classrooms? (Artepoulos, 2013, p. 66).

The fact is that, when balancing gains and losses in such education policies, governments continue offering ‘more technology’ as an answer to questions about education.

Changes or curricular innovations with the insertion of digital technology: ‘promise is a promise’\textsuperscript{11}? We argue that teachers should take an evolutionary rather than a revolutionary approach to change. It is likely that teachers will experience more success and less frustration if they take small, but progressive steps toward change. Moreover, they are likely to benefit from carefully balancing distance and dependence so that the two dimensions might compensate for each other. (Zhao, Pugh, Sheldon, & Byers, 2002, p. 512).

In addition to the response ‘technology’ being the most recurrent for governments when they intend to announce educational improvements, changes
and curricular innovations would be the ‘umbrella’ that seems to support such proposals.

The cleavage between the terms change and innovation seems to be a recurring strategy deeply used by Educational Reforms (Sacristán, 2006). The change, always associated with a positive movement, seems to prepare the ‘ground’ for innovation, and both are based on the imagination of a future, that is to say, in a so desired ‘progress’. Moreover, both terms, change and innovation, seem to have been reinterpreted by globalization (Pestana & Pacheco, 2013).

Given the conceptual difficulty, innovation in education can mean changes in several dimensions: curricular, pedagogical, technological; and, most often, they are operated as synonyms. As explained by Pestana and Pacheco (2013), excessive use of the idea of innovation, most of the time, sacrifices the present in search of a prophetic vision of the future, which may mean simply an ‘illusion of change’.

We also should note Bernstein’s (1984) warning about changes in education systems that are always focused on the education of the poor. Even today the slogan of ‘tradition’ is a gimmick for schools that serve the wealthy population. In this case, technologies appear as a modernizing element used in a way that can keep what is important in the curriculum, knowledge derived from ‘tradition’.

Technological innovation alone is already a very problematic innovation to the school environment. It is a process that is developed out of school and therefore responds to different logics. Thus, their insertion in this environment would come accompanied by challenges. Drawing from works related to curricular changes (Sossai, Lunardi-Mendes, & Pacheco, 2009), we understand that the national curricular arrangements in which the digital technologies operate in everyday school life, imaginatively, fulfil the function of ‘updating’ the school curriculum. Amidst these (re) arrangement assumptions and curricular discourses, we situate the set of policy strategies for introduction, in the school modus operandi of making education, the so known ‘digital technologies’.

The need to adapt school practices to the challenges of contemporary times has been a constant concern of curricular policies. In our point of view, such movement can be identified mainly by trying to change the school environment just through the insertion of technologies. Apparently, each ‘new technology’ that enters the school universe carries with it the necessary characteristics to ‘globalize’ the curriculum. As stated by Sancho (2009), it seems that we are facing a kind of ‘Trojan horse’, that is, the belief that only the insertion of technologies in the school environment can cause changes in practices and curriculum. Taking into consideration this praise for the computer world, we can find indications of government strategies that transform the computer - as an icon of technology – into an object of worship capable of promoting a qualitative leap in the lives of Brazilians and, in particular, in the school culture doings.

Building connected classes towards contemporary demands and the current forms of knowledge production, however, requires that the school not only constructs new practices, but also updates or redefines time, space and knowledge concepts, as well as the conceptions of the student and teacher roles. Thus, the insertion of computers as well as any other insertion one wishes to operate in everyday school life must necessarily be associated with a critical
reflection on the main foundations of the curriculum and the changes in teacher education.

Dussel and Southwell (2010, p. 26) deal with this issue when they consider the difficulty of teachers to comply with this current idea of ‘being connected’. The authors describe, for example, that a great literature teacher explained that computers were ‘taking’ the time in the classroom of what was truly important. The teacher asked: ‘What about me? When do I teach?’. This idea that the knowledge to be taught is elsewhere and cannot be produced and connected by the computer is actually quite common in teaching imagination. In contrast, the limited use of this instrument to search for outdated, superficial or incorrect concepts has also been a very present trap. In this sense, it seems that the insertion of digital technology itself does not guarantee improvements in the quality of education despite the social demands and the new possibilities this insertion carries. Like other artefacts, laptops and the Internet may be used for the same purposes of an educational proposal based on a disciplinary design. We observed that the current school curricular practices are backed by disciplinary assumptions and in compliance with the prescribed content, despite the insertion of technology that gives the opportunity for other forms of access to information.

Another recurring issue detected in our research is related to the explicit concern of teachers to affirm that the content of the curriculum has been fulfilled or that the curriculum has not changed. Basically, the possibility of having a huge culture archive, like never before available, and also the possibility of participating in processes of knowledge collective construction demonstrate the curricular need to discuss the validity of school knowledge being taught and makes the school work urgent - what Young (2007) calls ‘powerful knowledge’, that is, knowledge of scientific quality often unavailable in other environments to children living in disadvantaged social conditions.

**Conclusion**

In this investigation, different issues unfold, which can be expressed in the following question: How do teachers integrate laptops in the process of teaching and learning taking into consideration the curriculum? This question is not new and has mobilized researchers around the world. In particular, it is worth highlighting Zhao, Pugh, Sheldon and Byers's (2002) research along with a group of American researchers, as well as Cuban’s (2001), who in the early 2000s already tried to respond: ‘Why don’t teachers innovate when they are given computers?’.

Zhao’s group research indicates that the teacher that can develop innovative projects with the use of technology combines the following characteristics: technological proficiency, pedagogy compatible with the use of technology, knowledge of organization and the school culture. Their study demonstrates that the innovative projects found maintain a short distance from School Culture, that is, the teacher innovates from opportunities offered by his/her context, using the resources available. Similarly, his/her technology innovation experiences are very articulated to his/her previous experiences of innovation and have a small degree of dependence on other agents and technological resources.
This research gives special emphasis on the importance of school culture in this process, emphasizing the technological and human infrastructures available. It also highlights that, in the case of innovative projects with technology, innovation is derived more from a process of ‘evolution’ of small changing experiences than from revolutionary changes. Teachers need to develop the work with the technology associated with the teacher’s development and, therefore, the school support is essential. Besides, within innovation policies based on technology insertion, there is space for one more impertinent question: Are the teachers really ‘guilty’?

Sahlbert, in 2013, in a provocative paper published in The Washington Post – ‘What if Finland’s great teachers taught in U.S. schools?’12 - , discusses what the author calls the myth of ‘teacher effectiveness’, pointing how evolved education systems such as Finland’s do not bet ‘all their chips’ on the teacher. It seems that the error of an education policy such as PROUCA is this: a bet focused exclusively on the teacher as an agent of change, without respecting the cultural context of the school and its different dimensions that will effectively imply on the development of the work.

Within policy context, a more procedural monitoring of implementation of this type of program along with the definition of what is aimed in terms of changes and curricular innovations seems to be a necessary posture to prevent the States from assuming a role of ‘consumer’ devoid of critics and about to ‘consume’ the next big release of the market.

Notes

2. I thank my graduate student and member of our research group, Marilia Segabinazzi, for introducing me to this question and the book in which it is registered.
3. A set of researches in the area of History of Education in Brazil has helped us locate and understand these reforms and these ideas. In particular, we highlight and suggest Gil, Zica, & Faria Filho (2012).
4. We prefer the term ‘digital technology’ to the terms new technologies, or ICTs, although in some cases within the text they appear as synonyms. We understand that in the case of digital technologies, we are dealing with a specific type of artifact that also causes significant changes in cultural life. It includes hard and software that can be described as ‘hard infrastructure of wiring, computers, software applications, and other equipment, including laser disc players, over-head-mounted presentation machines operate from the keyboard, digital cameras, and so on. (...) also include the ‘soft’ infrastructure of technical support for all of this equipment, including scheduled replacement and professional development of teachers and administrators’ (Cuban, 2001, p. 12).
5. Educational netbooks or laptops are the names used to refer to the inexpensive computer, preferably used for internet access, which were distributed by policies and 1:1 model programs in different countries. In Brazil, the netbook is known as ‘Uquinha’ - the name that teachers and students use.
6. Here we refer to the rights of individuals with disabilities and Afro-descendant populations. The Curriculum Guidelines for Basic Education in Brazil try to reverse these historical exclusions.
9. On this issue, I suggest checking one of the master’s degree researches of our group, authored by Stela Mary Machado Götz (2014), in which the author investigates the perception of students on laptops. It is worth recording some of these insights:
About policies of technology insertion in schools and curricular changes

‘Interviewer: What is it possible to do using the educational laptop? The student I (11 years old) raises his hand to be the first to speak. He speaks in an ironic way: ‘Nothing, nothing and nothing. Wait, let me think, nothing! Wait, there’s one more thing, nothing!’ Students laugh. Student T (10 years old): ‘Actually it is possible to do everything, except ... you cannot do anything!’. Student I: ‘It is the slowest thing in the world, it is worse than my turtle’. Student U (10 years old): ‘You click, click, click and nothing happens, after a while everything appears on the top of the screen. Then, you have eighty three tabs to close’. Student Z (10 years old): ‘It is not lack of patience, a lot of things that you did not click onto, really appear and it’s really slow. You try to write something and it takes a long time to even type a letter’. Student T: ‘Now it is improving a bit’. Student O (10 years old) explains what happened with the laptop: ‘First Ubuntu was installed, then Ubuntuca was created, which was specially developed to work along with Uca’. Then, the same student completes that it got slower. Some say it got better. Student O: ‘I do not know if there was any problem during development ... or if it was really Uca causing this. You try to open it and an Error 83 appears, you try to reboot your computer, then you try to restart ... it sticks. Then you click once to open a page, nothing, you click again, nothing ... you click five hundred thousand times, nothing, and by the time you leave and turn the television on, five hundred thousand windows appear opened at once, and then you have to close one by one’. (Gotz, 2014, p. 139).

References


Benito, A.E. (2012). Las materialidades de la escuela (a modo de prefacio). In V. L. G. Silva, & M. G. Petry (Eds.), Objetos da escola: espaços e lugares de constituição de uma cultura material escolar (Santa Catarina – séculos XIX e XX) (pp. 11-18). Florianópolis: Insular.


Received: 19 January 2015

Accepted: 03 April 2015