“School of the Future” Research Laboratory/USP: action research and emerging literacies studies in WEB 2.0 environments

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ABSTRACT: This research report introduces School of the Future Research Laboratory at University of Sao Paulo - Brazil main projects and programs developed since 2007. Therefore abstracts of action research projects and programs are presented, as well as a general overview on theoretical studies approaches to study emerging literacies on WEB 2.0 contexts through virtual ethnography. Regarding in-progress projects information presented cover issues as: main objectives, chronology, structure, target audience and funding sources. In order to introduce the sinergy among action research projects and theoretical studies on social networks and their impacts on the areas of communication, education and information, research studies conducted by Digital Culture Observatory at School of the Future Research Laboratory are listed as books, technical reports (PONLINE) as well as masters and doctoral dissertations.

KEYWORDS: School of the Future Research Laboratory/USP; Digital Inclusion; Virtual Ethnography; Emerging Literacies on WEB 2.0 studies; Information Literacy Studies; Digital Collectives Knowledge Production.
1- SCHOOL OF THE FUTURE RESEARCH LABORATORY [NAP EF/USP]: ORIGINS AND MISSION

Figure 1 – NAP Escola do Futuro/USP Web Portal (http://www.futuro.usp.br)

The Research Center for New Communications Technologies Applied to Education - Escola do Futuro/USP (NAP EF/USP) began activities in 1989[1]. In January 1993 it was instituted as a Research Center, an entity under the control of the Dean’s Office for University Research Studies. Since its inauguration its mission has been to improve education in Brazil through the introduction of ICT’s (Information and Communications Technology) and WEB networking into formal and informal learning and teaching environments. In order to do so NAP EF/USP developed a partnership model involving university, society and different research funding agencies and government spheres to fund action research projects. Initially, it was funded by seventy research scholarships provided by CNPq (Brazilian National Research Agency) and, over the past twenty years, it has gained additional financing from other official research agencies as FAPESP and CAPES, as well as through agreements and contracts with both private and state-run institutions.

With its projects and research activities, the objective of NAP EF/USP is to implement innovative proposals that contribute to the reconfiguration of learning and teaching processes, through the use of the Internet and other multimedia resources. Accordingly, its operational activities are guided by core principles such as a commitment to research and the evaluation of different educational strategies and the application of academic research to classroom practice. Besides promoting the exchange of practices and knowledge among educators of national and international academic institutions, NAP EF/USP also contributes for the development of a new generation of
educators, who consider the interface among education, communication and information to be a fertile ground for collective knowledge construction.

In September 2006 the scientific coordination of NAP EF/USP gained new management directives, shifting the focus to projects and programs that incorporate digital technology into formal and informal education and citizenship initiatives, as well as the development of theoretical research projects on social networks and their impacts on the areas of communication, education and information. Projects implemented by NAP EF/USP are based on the action research model, which brings together the subject and the object of research. The researcher is inserted into the population group involved in the research and all involved participants take part on the process of knowledge creation (THIOLLENT, 1986: p.14).

Understanding media universe and new ways of learning, teaching and producing knowledge in this context requires qualitative and quantitative studies regarding the impacts of ICT on contemporary life. In an attempt to illuminate new aspects of the “network society” NAP EF/USP instituted in 2007 the Digital Culture Observatory devoted to theoretical research whose purposes are to investigate emerging literacies on WEB 2.0 environments focusing on the concept of literacy as a set of social practices as proposed by different researchers as Warschauer[2]; the individual and collective production of knowledge in network environments and, therefore, new forms of authorship inspired on digital collectives and “other network players” at the intersection of hybrid frontiers that make up the so-called “skin of culture”, concepts raised by authors like De Kerckhove, Castells and Latour, among others [3]. A usual research methodology used by NAP EF/USP is virtual ethnographic perspective to investigate new behaviors of players immersed in cybertecture.

The development of a perspective that links intervention projects on digital inclusion and emerging literacies to theoretical research enables NAP EF/USP both to act on and to evaluate the historical, social and economic context in which they occur. This double articulation favors feedback among projects and research activities, and helps to shed some light on the new format of contemporary life. By articulating this duality among projects and research activities, this research report details the entity’s activities at the forefront of digital culture, with regards to the execution of pioneering projects involving the introduction of computers into teaching/learning environments, such as in the case of Bibvirt – The Virtual Library for Portuguese-Speaking Students, one of the first Brazilian virtual libraries, launched in 1996 and deactivated in 2008. This virtual library had around five thousand users per day and received nine iBest[4] awards in the Digital Inclusion category.

Other pioneering projects involving digital inclusion in both public and private schools also deserve to be highlighted, such as the Mutirão Digital (“NET DAY”) project (1998-2000), in conjunction with the São Paulo State Rotary Foundation, whose purpose was to promote the digital inclusion of students and teachers in both public and private school systems in Brazil. Two seminal projects were born in the wake of NET DAY project, with efforts focused on the digital inclusion of students and teachers. In São Paulo state public school sphere, the project TôLigado – O JornalInterativo da SuaEscola [“Your School’s Interactive Newspaper”] was implemented in the 2002-06 period, in conjunction with the São Paulo State Education Department. This project was a pioneer in promoting the collective production of knowledge among students in the internet environment. Around 2000 schools from the public school network took part and, all in all, about 5,000,000 students were responsible for the publication of around 8000 papers. On the national front, we developed the project Tônomundo, from 2000 to 2009, in conjunction with OiFuturo (ex-Telemar), which focused on digital inclusion in public schools situated in counties of up to 10,000 residents
with low HDI rates, with special emphasis on public schools in the north and north-eastern regions in Brazil. It is also worth highlighting our teacher training initiative for ICT adoption, which was of fundamental importance to the success of the program itself, due to the precarious conditions experienced by the communities where it was implemented.

This research report presents a summary of main projects and research activities currently underway. In Chapter 1 - NAP EF/USP: origins and mission a brief history and a small summary of the first vanguard projects of ICT in education are presented. Chapter 2 - Main Projects: The Context of Action Research describes the main action research projects (intervention), detailing their mission, chronology, structure, target audience, objectives and means of financing. Chapter 3 - Main Research Activities: the Digital Culture Observatory introduces a scenario focusing our scientific production published as books, technical reports and masters and doctoral thesis. Chapter 4 – Building Futures presents a discussion on emerging literacies on Web 2.0, as well as virtual ethnography as a method for field research in virtual worlds. Chapter 5 – References ends this report with a list of referenced works and webgraphy.

2 – MAIN PROJECTS: THE CONTEXT OF ACTION RESEARCH

The action research projects developed by NAP EF/USP over the last twenty years are characterized by their incorporation into both formal and informal educational contexts, as well as into contexts that promote digital protagonism and citizenship. Accordingly, they will be categorized here into Social Networks for Citizenship and Social Networks for Formal Education.

2.1 – SOCIAL NETWORKS FOR CITIZENSHIP (Under execution)

2.1.1 AcessaSP (Network São Paulo)

Period: 2000 - 2010

Financing Institution: Public Management Department of São Paulo State Government
In conjunction with the São Paulo State Government, managed by PRODESP (São Paulo State Data Processing Company) under the coordination of the Public Management Department, this program for digital inclusion and social protagonism has become the most distinguished digital inclusion program in the state of São Paulo and it has become a reference nationwide. The indicators below attest to the significance of the AcessaSP Program:

- 10 years of operational history
- 50,829,596 people impacted
- 2,068,282 registered users
- 602 AcessaSP kiosks currently operating
- 42 kiosks being implemented
- 543 counties served
- 1,172 monitors trained

Instituted in July 2000, the AcessaSP program creates and maintains public spaces called service kiosks or infocenters and/or telecenters, staffed by trained monitors who mediate unrestricted and free access to the internet, thus contributing to the social, cultural, intellectual and economic development of citizens in the lower income bracket residing in the state of São Paulo. The AcessaSP program has two different types of infocenters. The project is implemented in counties in conjunction with local governments, and it is generally accommodated in county libraries. Public Internet Access Kiosks (PoPAI’s)) have been implemented in conjunction with São Paulo State Government departments and entities, such as the Poupatempo public services center, the Bom Prato community restaurants, bus terminals, train and subway stations and State Government offices.
Besides the creation and maintenance of public internet access centers, AcessaSP also produces digital and non-digital content for training and informing users. It also carried out on-site and virtual actions that contribute to the conscious use of the internet and other new technologies, as well as other community projects that use information technology. The AcessaSP Digital Inclusion Program was awarded the “Mário Covas Prize “ for Innovation in Public management in the State of São Paulo” in 2006, 2007 and 2009, as well as the ARede [The Network] Award in 2009 and 2010.

The impact of Brazilian public policy pertaining to digital inclusion is evidenced by the Brazilian dominance of on-line social networks. A recent report in the O Estado de São Paulo newspaper stated that 86% of Brazilians that use the internet also participate in on-line social networks, the highest rate of penetration in the world; Italians appear in second place, with 77% of penetration rate.[5]

2.1.2 Portal da Juventude [Youth Web Portal] Project

Period: 2009 - 2010

Financing Institution: São Paulo City Government Department of International Relations

![Figure 3 – Youth Website (www.juventude.sp.gov.br/)](image)

Developed by the Youth Programs Unit of the State of São Paulo, the Portal da Juventude Project (Youth Website) is aimed at the digital inclusion of youths in the state of São Paulo. The purpose of this partnership is to promote content production and pedagogic support for the website and to lay out state public policy positions pertaining to youth. It was also conceived to expand and activate on-line youth networks in the State of São Paulo.

Instituted in 2009 (and consequently without solid indicators to be presented), the aim of this project is to provide the youth community of São Paulo state (mainly) with information on their rights and all public policy matters pertaining to this segment, as well as to establish a communications structure that motivates youth to participate in the programs carried out by the State Government through participation in the Youth Web Portal. By providing information and
services to this segment of the population, the project also publicizes state government actions, thus making knowledge on them more available and accessible to youths.

In order to attain these objectives, NAP EF/USP carries out various stages of conception, development, implementation and evaluation of research, as well as pedagogic and technical support and the inclusion and adaptation of social communications technologies. It also carries out an ongoing evaluation of the content of the website, develops applications that empower and articulate the young target public on the network, creates usability diagnostics, as well as qualitative and quantitative research on youth issues. Elements of cyberculture and web analytics, collaborative systems and Web 2.0 go to make up the program’s actions aimed at youths and youth protagonism on the internet, thus constructing an innovative project that employs an architecture directed at the participation and exploitation of collective intelligence potential.

2.2 - SOCIAL NETWORKS IN EDUCATION (Under Execution)

2.2.1 Investigações Ambientais na Escola [Environmental Investigations in Schools]

Period: 2008 - 2010

Financing Institution: Petróleo Brasileiro SA. (PETROBRAS)

![Figure 4](http://www.investigacoesambientais.futuro.usp.br/)

This project acts on transformations in the learning-teaching process by implementing methodologies at a virtual learning community directed at science teaching in schools. The activities being developed are directly linked to education, through research into the area of science teaching, the production and evaluation of didactic material and the implementation of multi-disciplinary and investigative projects. A team of biologists, chemists, physicists and pedagogues create different scientific virtual investigative projects that address real issues in various contexts in the areas of biology, physics and chemistry.
The group has already involved more than 500 teachers, 100,000 students and 100 schools all over Brazil and other South American countries in its research. The target public consists of students aged 7 to 17, in both public and private schools. Currently, research is being carried out in county schools in the city of Cubatão (state of São Paulo), in conjunction with the Center for Environmental Training and Research (CEPEMA), sponsored by PETROBRAS.

2.2.2 Clubinho Faber Castell [“Faber Castell Kids’ Club”]

Period: 2008 - 2010

Financing Institution: Faber-Castell

Developed in conjunction with the Faber-Castell company since 2008, the Clubinho Faber-Castell is an art-education project for pre-school students, consisting of a virtual environment featuring playful visual language and multi-disciplinary activities covering a range of subjects, such as ecology, sustainability, citizenship and recycling. The project involves students, teachers, parents and the communities in school neighborhoods. It has more than 2,000 registered users and 5,000 activities produced by the users.

NAP EF/USP plays important role mediating the virtual community to emphasize new ways of learning and practices focusing visual arts. Users, whether students (primary or intermediate level), their family members and teachers, can do the proposed activities, either in the classroom, at home or in an on-line environment. The virtual environment works as a go-between for the proposed on-line and off-line activities, whose results may be published in specific sections. Activities posted in the environment can be viewed by other students, parents, teachers and internet users in general. Games, tips and multimedia material are also available.
2.2.3 AcessaEscola [Networked School]

Period: 2009 - 2010

Financing Institution: Public Management Department of São Paulo State Government

The Networked School program is being developed in conjunction with the Public Management Department of São Paulo State Government, under the coordination of the Foundation for Educational Development (FDE). Its purpose is to promote digital inclusion among state public school students and to provide access to digital culture to this segment of the population in a collaborative manner. Through the internet, it enables users to access information and communications technologies for the creation of knowledge and the social empowerment of the school nucleus. It reaches almost 2,000 schools in 239 counties in the São Paulo Metropolitan Area and in the state countryside, and it benefits around three million students, teachers and community residents. It also promotes exchanges among users - members of the school community, such as teachers, employees and professionals that participate in the Escola da Família [School Family] Program, as well as trainees working in the program. One of the program main points of interest is its autonomy regarding the learning process, based on subjects of common interest and issues of extreme relevance to the management of digital inclusion programs.

2.2.4 EntreMeios (InterMedia Education Project)

Period: 2010 - 2011

Financing institution: the São Bernardo do Campo City Education Department
This project aims to promote the integration of Information and Communication Technologies (ICT) in county public schools in São Bernardo do Campo in an attempt to remodeling the school environment within the context of modern technology, with schools adopting characteristics of cyberculture and educators also acting as cognitive architects, who view the learning process from the standpoint of digital natives. The project also intends to provide each participant in the learning process with means to reconfigure their roles, to integrate with ICT in schools, to participate in a collaborative working community and to integrate technology into their educational practices in a natural manner. The target public consists of 600 teachers, 170 headmasters, 200 coordinators, 60 pedagogic advisers and 60 laboratory monitors.

![EntreMeios Website (page under construction)](image)

Figure 7 - EntreMeios Website (page under construction)

3– MAIN RESEARCH PROJECTS: DIGITAL CULTURE LABORATORY

The purpose of NAP EF/USP Digital Culture Laboratory is to investigate network players behaviors in different contexts to develop research of both a purely theoretical nature, based exclusively on literature review about authors and concepts in question, as well as field research studies involving cyberspace populations using virtual ethnography methodology.

This research regards internet both as an environment where cyberculture is created and reconstructed, leading to a study field in which the researcher must be immersed, and also as a product of a culture in which technology is produced by individuals with contextually situated objectives and priorities. It aims to understand attitudes and behaviors of internet users and how they interact with different sources of information; how they compare, analyze, select and transform data leading to knowledge construction in Web 2.0 environment.
3.1 Scientific Production of the Digital Culture Observatory

The Digital Culture Observatory *modus operandi* is based on researchers exchange among different units of the University of São Paulo (such as Communication and Arts School; Engineering School; Philosophy, Language, History, Geography and Human Sciences School; School of Economics, Administration and Accounting, among others), as well as on agreements with other further educational institutions, both national and international. These partnerships objectives are to supply institutional support to students and teachers involved in scientific research in different areas of knowledge focusing on the confluence among Communication, Education and Information. The studies developed at Digital Cultural Observatory may result in master's dissertations, doctoral theses and post-doctoral projects, to mention a few.

Digital Cultural Observatory is currently undergoing a process of internationalization and since 2008, international agreements with the following entities have been signed: (I) University of Porto (Portugal) - CETAC.media Institute; (II) Carlos III University, Madrid (Spain) - AgustínMillares Institute; (III) University of London (England) - ICT4D Collective at Royal Holloway. These agreements cover academic cooperation and exchange among the respective institutions for the development of research projects, scientific publications and other academic activities.

Digital Culture Observatory also aims to give visibility to academic scientific production (master’s dissertations, doctoral theses, Ph.D theses, monographies, technical reports) through the publication of printed books and e-books, reconfigured as popular language for general consumption. Therefore we have established an agreement with SENAC São Paulo publishing house. Original compilations on network society are also covered by this agreement.

### 3.1.1 – Books and Compilations published by SENAC SP Publishers

Published in 2007, the book *Interfaces digitais na educação: @lucinações consentidas* ["Digital interfaces in education: consented allucinations"] was based on the Ph.D. thesis by Prof. Dr. BrasilitaPassarelli and presents the ethnographic method to study four virtual communities for learning and practice projects, dedicated to different target audiences, detailing different on-site and distance learning possibilities.

In 2009, the compilation *Inclusão digital e empregabilidade* ["Digital Inclusion and Employability"] was published dealing with studies of digital inclusion and its impacts on those in search of a position in a world that demands professional specialization.

In 2010, the following publications have so far been produced: *Educação sem distância* ["Non-Distance Education"] by Romero Tori, which provides a basis for education supported by interactive technologies, with digital media taking a prominent role and offering new forms of work and learning opportunities; *Linkania: uma teoria de redes* ["Linkania: a networks theory"] by HernaniDimantas, deals with the rise and development of cyberculture in Brazil, as well as the inclusion of cyberculture in different spheres of society, from the standpoint of experience and analysis, participatory research and theory. *Web e Participiação: democracia do século XXI* ["The Internet and Participation: Democracy in the XXI Century"], by DricaGuzzi, deals with the concept of public participation in programs, projects and initiatives established by governments of democratic states around the world.
The latest anthology produced by Digital Observatory researchers is *AtoresemRede: Olhar(es) Luso-Brasileiros(s)* [*Network Actors: Portuguese-Brazilian Views*] fruit of the agreement with Porto University and to be launched in early 2011 by SENAC SP publishing house.

### 3.1.2 Ponline On-line Survey Report[6]

AcessaSP Program has published Ponline on an annual basis since 2002. This is an On-line Survey of AcessaSP Program Users - an extensive survey of internet users at the digital inclusion program to investigate user profiles and their on-line habits. Its past editions gave us an overall view of the Program development. Ponline data presents performance indicators, which enable managers to identify priorities and parameters in order to decide where and how to apply efforts to improve the program. Ponline also enables the data obtained from important surveys carried out in Brazil and abroad to be technically and methodologically adapted, thus empowering retrospective analysis and may also lead to new studies on the impact of public policies regarding digital inclusion in the state of São Paulo.

### 3.1.3 Theses and Dissertations on NAP EF/USP Action Research Projects

Among theses and dissertations underway[7] in the Graduate Program in Communication Sciences (PPGCOM) of the Communication and Arts School at the University of São Paulo, several have the purpose of studying action research projects developed by NAP EF/USP. From 2007 to 2010 the following dissertations were presented in a jury:


### 4. BUILDING FUTURES

NAP EF/USP trajectory and, consequently, its current characteristics are mostly based on the articulation among digital inclusion action research programs and ethnographical research with the purpose of investigating and mapping emerging literacies on WEB 2.0 environments. These two instances provide feedback on knowledge production within the network, both for action research projects as well as for theoretical research. In the ebb and flow of projects and research activities, NAP EF/USP has become an important “player” at the forefront of Internet studies in Brazil. Whilst its first initiatives with regards to the Internet were primarily directed at the digital divide - with the
purpose of enabling broader access to the network - the second, and current set of initiatives has resulted from social networks phenomenon shifting the focus of research and projects on digital inclusion to WEB 2.0 emerging literacies.

The word literacy is controversial and can have different meanings in Portuguese: in terms of reading and writing, it is linked to the world of letters, education and learning, as a constructive process. However, it can also mean competence or ability. In the network society, the notion of literacy also refers to the capacity to interact and communicate through ICTs. It reflects the development of human communication formats and the means of knowledge production. While access is a pre-requisite for broad participation in knowledge society, literacy is also a pre-requisite for social protagonism and citizenship.

According to Gilster (1997) - researcher who coined the term digital literacy - it is the “logical extension of literacy itself, just as hypertext is an extension of the traditional reading experience” (1997, p.230). The author defines digital literacy as “the ability to understand and use information in multiple formats from a wide range of sources when it is presented via computers” (1997, p.1), and he extends the limits of the concept by stating that “digital literacy is equally about context” (1997, p.35).

According to Warschauer (2003), the notion of literacy can be divided into stages. In the 19th Century, literary knowledge, rhetorical accuracy and the ability to write correctly were considered part of a paradigm that corresponded to the demands of the aristocratic social structure, where education involved tradition and power. From the last decade of the 20th Century on, inside the knowledge society, literacy is related to abilities as knowledge construction through non-linear narratives, building new semantics and new logics, also considering creativity and expression development.

According to Jones-Kavalier and Flanningan (2008, p.13-16), literacy is characterized by the ability to use information effectively and creatively. In the transformation from a lettered culture to a media and convergence culture, characterized by non-linearity and interactivity, the concept of literacy expands, covering the capacities demanded of users so they may explore this multi-media potential. The lettered participants of the network society are those that can read, write, interact and communicate through this multi-media language, which recognizes social practices and textual genera that involves each element of this interface.

In cyberculture environments ethnography has been used as a methodology to investigate virtual players and their behaviors. Initially ethnoografical proposals in cyberspace cover the experimentation of identity and corporal freedom, as shown by Sherry Turkle (1993) studies. It stands out as a research tendency in virtual environments, at a moment when several methodological solutions are arising for the study of cyberspace and its evolution. Christine Hine (2000, 2005) has laid out a long discussion on the relationship among traditional ethnography and virtual ethnography, focusing on the possibilities as well as the practices of researchers in several countries, including Brazil, with regards to this issue. Several studies have arisen from this discussion, including a theoretical framework that employs ethnography in cyberspace (Guimarães, 2005).

Currently, methodological issues shift the focus from ethnographic studies to studies linked to the diversity of a digital culture and reshape the concepts on which ethnography is based. Virtual ethnography constitutes a methodology that is currently widely used in research on social networks, and it aims to observe, analyze and interpret cyberculture, a culture that is developed
through participation of digital collectives. In the course of virtual ethnography, Netnography also arises. This is a term coined by Robert Kozinets (2010) to define a research methodology for ethnographic studies on the internet, whose foundations are registered in the book *Netnography: doing ethnographic research online*.

Aiming to map and understand WEB 2.0 emerging literacies, researches developed by NAP EF/USP Digital Culture Observatory, intends to explore multimedia cultural context of WEB 2.0 non-linear narratives, where digital collectives submerge individual presence. New forms of logic and new semantics are being invented and created faster than we can unravel them. The better we understand new competencies inside knowledge society the better we will prepare our students for their future, and not to our past.

5. REFERENCES


**Webography**

Portal NAP Escola do Futuro/USP
http://www.futuro.usp.br

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http://acessasp.sp.gov.br

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Portal Clubinho Faber-Castell
http://www.clubinhofaber.futuro.usp.br/

Portal Acessa Escola
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[1] NAP EF/USP was founded under the scientific coordination of Prof. Dr. Fredric M. Litto of the Communication and Arts School (ECA), at the University of São Paulo (USP), who was head of the entity until September 2006, when Prof. Dr. BrasilinaPassarelli, Cathedratic Professor at the Department of Information and Library Science at ECA/USP, took over. Prof. Passarelli is currently head of the aforementioned department.


[4] iBEST is a award devoted to digital players and more info can be obtained at <http://blog.premioibest.com.br/>


[7] All dissertations presented here were advised by Prof. Dr. BrasilinaPassarelli in the Graduate Program on Communication Sciences (PPGCOM) of the Communication and Arts School (ECA), at Social Interfaces of Communication area with research focus on Communication and Education.