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Networked Together:
Designing Participatory Research in Online Ethnography

Proceedings of the 3rd Annual International Conference on Rethinking Educational: researching on-line communities and interactions (Naples, 6-7 June 2013)

Editors: Paolo Landri
Andrea Maccarini
Rosanna De Rosa

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Introduction

Paolo Landri[a,1]
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Abstract. This book contains the conference proceedings of the third edition of *Rethinking Educational Ethnography: Researching on-line communities and interactions* Conference hold in Napoli from 6th to 7th of June 2013. In 2013, the third edition of the Conference has invited ethnographers in different fields of research (not only in education), and those involved in ethnographic investigations in diverse disciplines (anthropology, sociology, etc.) to present and discuss contributions on the challenges of participatory research design in digital ethnography.

Keywords. Ethnography, Education, Online Communities

1. Challenges of participatory research in online ethnography

This book collects the papers presented at third edition of *Rethinking Educational Ethnography: Researching on-line communities and interactions* Annual Conference that has been organized from 6th to 7th of June 2013 at the University of Napoli 'Federico II', by the Institute of research on population and social policies of the National Research Council of Italy (IRPPS-CNR) in collaboration with Network 19 'Ethnography' of EERA (European Educational Research Association), and with the network of Sociology of Education of the Italian Association of Sociology (AIS-EDU).

This annual conference followed a long-term discussion that began in Helsinki at ECER 2010 (European Conference on Educational Research), when participating researchers of the EERA Network 19 'Ethnography' discussed emerging research concerns about virtual ethnography and discovered a shared interest. In 2011 this debate gave rise to the first annual Conference, held at the Faculty of Psychology and Educational Sciences, University of Porto and organized by Educational Research Centre(CIIE), and to a second meeting in Berlin. In 2012, the second annual Conference was organized by the Centre for the Study of Change in Culture and Education (CECACE) and the Department of Educational Management was held at the University of Barcelona. In 2013, the third edition of the Conference has invited ethnographers in different fields of research (not only in education), and those involved in ethnographic investigations in diverse disciplines (anthropology, sociology, etc.) to present and discuss contributions on the challenges of participatory research design in digital ethnography.

In many respects, the massive diffusion of Internet and the many forms of digital, or web-learning reshapes 'traditional' hierarchies in education, and leads to complex restructuring of teaching and learning apparatuses (Hammersley 2006; Murthy 2008).

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At the same time, and partly for the same reasons, we may notice an increase of possibilities for the subjects of educational and social research to be involved in the ethnographic investigation as active co-producers of data, even as co-ethnographers in many stages of the ethnographic investigation (collecting, analyzing, writing ethnography, etc.). This involvement implies the association among ethnographer(s)-subject(s) that permit to be *networked together* during the investigation. This new possibility reshapes the sense of 'being there', and multiplies the presence of the ethnographer(s) (Landri 2013). The emergence of that association raises 'new' and 'old' questions for educational ethnography: How to involve humans and nonhumans in online ethnography? In which ways, the involvement reshapes the circulation of knowledge (hierarchical vs horizontal forms of circulation)? What is the 'status' of this ethnographical knowledge? Public or private? What is made 'public' (open worldwide), or what remains 'private' knowledge in those researches? What is the 'ethical' positioning of the researcher in these associations?

The third edition invited paper proposals that could explore the development and consolidation of these associations and that reflected on the effects of this being networked together for the production, circulation, and validation of the ethnographical accounts. In particular, the third annual Conference addressed these issues:

- Creation and stabilization of socio-technical settings to engage students, learners, teachers, headteachers, educational workers, etc. in digital ethnography;
- The effects in terms of the circulation of knowledge (reproduction of hierarchies, or promotions of horizontal forms of diffusion; the status of knowledge: what is made public, and/or what remains hidden);
- The role of the subjects of research as knowledge co-producer (collecting, analyzing data, writing reports, etc.) and the challenge of knowledge co-producing for educational ethnography;
- The ethical positioning of the researcher ("pure" ethnographer, social activist, etc.): Should online ethnography be authorised ? In which ways ? What formal and informal agreements

2. The content of the publication

The publication includes the selected contributions, and in particular, ten papers and two short papers that present empirical findings and reflections from ethnographies experiencing the challenges of the multimodal forms of communication of new digital technologies.

By drawing on dramatic ethnography, Delfim Paulo Ribeiro describes a project of exploration of the theme of transactional analysis during the course of Social Psicology at Instituto Piaget in Portugal. The investigation is a *blended dramatic ethnography* where students are invited to reflect on their off-line and on-line social interactions with their colleagues, and with teachers in the many places and situations of academic life. A social web platform is a mean to intensify the dramatic and imaginative work, and increases the awareness of the subtleties of the interplays at the university by taking a distance from the reproduction of the existing patterns of interactions. The digital worlds facilitate the social interactions and allow an increase in the possibilities of producing ethnographical accounts.

Carla Luzia de Abreu addresses the ethical issue in the use of social network when doing ethnography. She is studying the construction of non-heteronormative digital identities in online social networks, by using a network called *Desobedientes* consisting in a website, a personal profile, fanpage on Facebook and other social network, like Youtube. The field of study is co-constructed with research subjects, i.e. with those interested in sharing knowledge and experiences on the identity construction of non-heteronormative digital identities. Carla Luzia de Abreu's research highlights how the flexible adoption of ethical guidelines may favour a mutual trust among researchers and participants to research in a very difficult theme of inquiry.

Daniel de Queiroz Lopes, Eliane Schlemme, and Rosane Kreusburg Molina' s paper proposes a carthography mediated by digital technologies. Here, the interest in developing a participatory approach between researchers and research subjects in the production and analysis of data leads to use digital applications (in this case, *Evernote*) to collect etnographic data in collaborative way. The paper presents emergent findings of an ongoing research in Brazil, aimed at favouring the use of mobile technologies in teaching and learning in school, and displays how ethnographers actively contribute with the research subjects to the shaping of the field of study.

Assunta Viteritti investigates how scientific pratice can be shaped by the use of web based technologies. The paper analyses how the use of Skype intervenes in the production of scientific knowledge. The presentation describes how researchers work at a distance, and in particular, how researchers working on neurodegenerative illness work together by commenting four photos taken from experiments they are working on. Assunta Viteritti shows how the process of doing science requires the nurturing of professional vision, and how Skype may enable this process while researchers are working together.

Anna Piela, Hugh Busher, Nalita James, and Anna-Marie Palmer analyse the use of social network for students of Access to Higher Education courses in England, a qualification for students that left the study before getting the envisaged qualification to study at the university. In that case, the paper focuses on how Facebook may facilitate learning.

Simone Schlichting-Artur's paper draws on a pilot course for foreign language students (here German students) that has been given the task of record themselves in the language target for one hour per week. The registrations are sent to other students having the task of listening transcribing the records, and posting them on an online course page. The digital ethnography allows students to increase their linguistic skills, and gives teachers a mean of formative assessment.

Karen Borgnakke and Anita Lyngsø follow the initial steps of a new online education in health care. They discuss, in particular, the challenges of following the online course, and the movement between off-line and on-line activities. 'Following the field' implies listening professional voices, coping with technical culture of the learnin platforms, and also tracing the movements of students that crossing on-line and off-line activities. For those reasons, the ecological validity of ethnography depends now on a mix of multimethods and a multiplicity of flow of data.

Catarina Player-Koro and Dennis Beach' investigation concerns the IT-education policy and municipal investments in one computer to every student and teacher in Sweden. The study experiments *network ethnography*, that is a research design that mix social network analysis and ethnography. Social network analysis helps to select the field of analysis in such a way to identify key events to be investigated to understand the development of the policy.

Vibeke Røn Noer paper reflects on the use of video diaries in nurse education, and in particular, on the use of Ipad video diaries as way to understand alternative mode of performing education. Here, the study highlights: a) how students were keen to participate to the research, b) how the use of Ipad was extended beyond the task of the investigation, meaning that it leaded to spontaneous videos c) how the Ipad videos reframed the type of presence in the field in unexpected way.

Fernando Hernández-Hernández, Juana María Sancho Gil, Rachel Fendler' paper presents a series of five multi-sited ethnographies to understand what occurs when young people observe, reflect, narrate and share how they learn to communicate and express themselves, in and outside secondary school. The investigation was part of a project aimed at reducing school drop-out, exclusion and abandonment among youth. In that case, they show 'a layered and polyphonic representation of learning, creating a virtual field based on the mobile practices of young people'.

Finally, the publication includes two short papers concerning Citarella's work on Second Life and Fierro's project on the use of ICT in rural schools. Citarella discusses how Second Life may be a place for ethnographic investigation, while Fierro gives some information on its research project on the implementation of educational technologies in rural schools.

The discussions during the Conference, and the papers collected deals with the challenge of doing ethnography of the contemporary landscapes of education. The collection shows some directions of the changing field of educational ethnography, and in particular how ethnographers are experimenting new forms of presence in their fields of investigation. Overall, the papers highlight the attempts, the temporary arrangements, and also the flexibility of ethnography coping with the increasing mediatized experience of educational and learning worlds.

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Games people play in University culture: An ethnographic blended dramatic research based on transactional analysis

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Abstract. This paper reports a study on life experience and creative productions of students (participating researchers) about university culture. The research is based on character creation and dramatic interactions in real and virtual world. The adopted theoretical framework is transactional analysis, which relies greatly on graphical representations of human interactions centered on three ego states (parent, adult and child). The dramatic research perspective accepts the subjectivity of the researcher as a tool, allowing an interpretive and critical intentionality that can fracture the cultural evidences, permitting the emergence of new ways of acting within the conformed tradition.

Keywords. blended dramatic researching, ethnographic metafiction, transactional analysis, University culture

1. Introduction

This work does not pretend to be understood as a theoretical exploration or a quest about methodology. It just aims to describe an experience of character and image creation that made use of online tools. This work is part of a journey that begun a few years ago when we started to reflect on dramatic ethnography (Ribeiro, 2007, Ribeiro, 2011). It should only be considered as another step in what we believe will be accepted as an emerging methodology within the context of the performative arts based research (Biggs 2006, Cahnmann-Taylor 2008).

2. Context

This specific project was carried out at Instituto Piaget, in Portugal, with a group of university students during the curricular development of the Social Psychology unit. Instituto Piaget is a Portuguese private institution that offers university courses in several areas. Currently, due to the demographic and economic crisis that is felt in Portugal, added by the university campus.

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3. Theme

During the curricular development of the Social Psychology Unit, which involved eight students and a teacher, a project was designed to explore, in a creative and dramatic way, the theme of transactional analysis. The project was based on the students` reflections on interpersonal relationships that could occurred in several university contexts: including student / student; student / teacher and teacher / teacher, in different locations: classrooms, hallways, cafeteria, bar, library and outer spaces, and in several situations: e.g. lectures, study situations and conviviality. The research adopted online collaborative processes, mainly through the social network platform called Dolphin.

The basic theory for this project was the Transactional Analysis (TA) developed by Eric Berne around 1960. As a theory of personality, the TA allows to analyse the attitudes and behaviours of each individual facing the most diverse situations. Largely based on graphical representation of human interactions, the TA assumes that we communicate through three ego states: parent, adult and child (Berne, 2010, Fachada, 2012). The Transactional Analysis allows the subjects to become aware of the way they think and behave within relationships. For Steiner (Steiner 1990) ultimately, the Transactional Analysis seeks to identify patterns of interpersonal functioning; preventing individuals to merely became reproducers of the pre-established.

4. Methodology

The designed methodology for this project was entitled as a blended dramatic ethnography, since it implies a close relationship between the physical and the online interactive experiences and between the real and the virtual world. The idealized dramatic processes allowed the participants to create characters and to adopt the multiplication of identities as a tool for reflection (Ribeiro, 2007, Ribeiro 2011). Moreover, these multi-subjectivities induced the participants to adopt interpretive and critical points of view, allowing them to engage with cultural rupture and with the emergence of new ways of being and acting, estranged to the conformed tradition (Madison 2005, Denzin 2003b). The dramatic research was used as a strategy to promote a deeper understanding of community problems and to induce the participants to commit themselves with the actions that can transform the existing reality (Ribeiro 2011). Indeed, dramatic ethnography corroborates Norman Denzin (Denzin 2003a, p. 273) when he says that the performative practice “interrogates and criticizes those cultural narratives that make victims responsible for the cultural and interpersonal violence they experience”.

5. Process

In order to clarify the development of the project, we organized its various stages as followed:

1. Participated discussion and online research about the theoretical components of the project, particularly those related to transactional analysis;
2. Adaptation of a social platform where participants could create characters, publish images and interact through forums and blogs. During this phase, the participants (students) were invited to create three platform users, with their

corresponding nicknames and avatars. One of the nicknames corresponded to the students' real self and the other two to imaginary characters (a teacher and a student). The image below displays an example of the character creation by two participants:

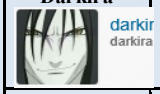
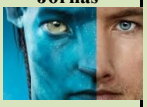
Real Name	Nickname	Role	Personal traits
A	**Darkira** 	Student	Myself
	Rocket 	Student	Music student. Clumsy and rushed. Likes to do several things at the same time and usually leaves everything to be resolved at the last minute. Likes to help everyone.
	Chuck-Norris 	University Teacher	Specialized in martial arts. Thinks that he knows everything. No one can object to him because he usually rejects anything contrary to his thinking. He is very demanding and not very close to his students. Although, he is always willing to help…
B	**Luigi** 	Student	Myself
	Jornas 	Student	Accounting student, called "Nerd". Is a person with many skills, with a high IQ ... always finds explanations and theories for almost everything, even the most small and insignificant... Manic with cleanings, does not allow anyone to enter his house with the shoes on. Is very careful with his personal hygiene and with home cleaning. Has great difficulty with socializing and to create friendship.
	Etelvino 	University Teacher	Specialized in obscure mathematics and sciences. Is very insecure about what he does in his profession ...his students are correcting him constantly...

Figure 1. Examples of characters and avatars created by two participants

3. After the character creation, the participants used the platform to idealize imaginary situations using photographs and montages that could represent, in a creative way, different relationships in the university context. This was done taking into account the transactional ego-states (parent-adult-child);
4. In the final phase, the participants took performative photographies and organized an exhibition in the real space of the university campus.

6. Platform Fragments

To share an idea of the works that were created online, we display some image crops of the platform dolphin with their corresponding subtitles. During this phase, the participants were invited to adapt internet images and add on them dialogues about interpersonal relationships

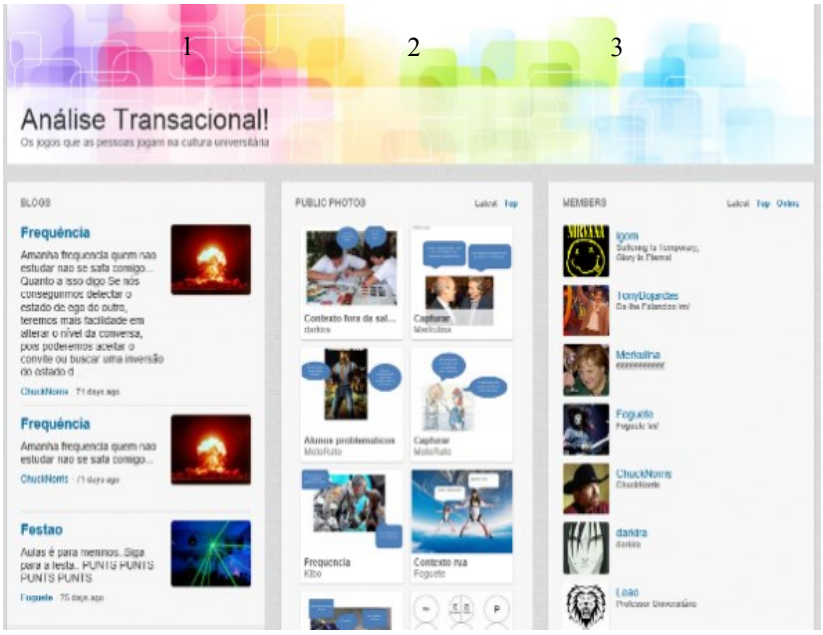


Figure 2. Crop of the platform homepage.
Legend: 1 - Blogs and forums; 2 Images and comments; 3 - Users and Avatars

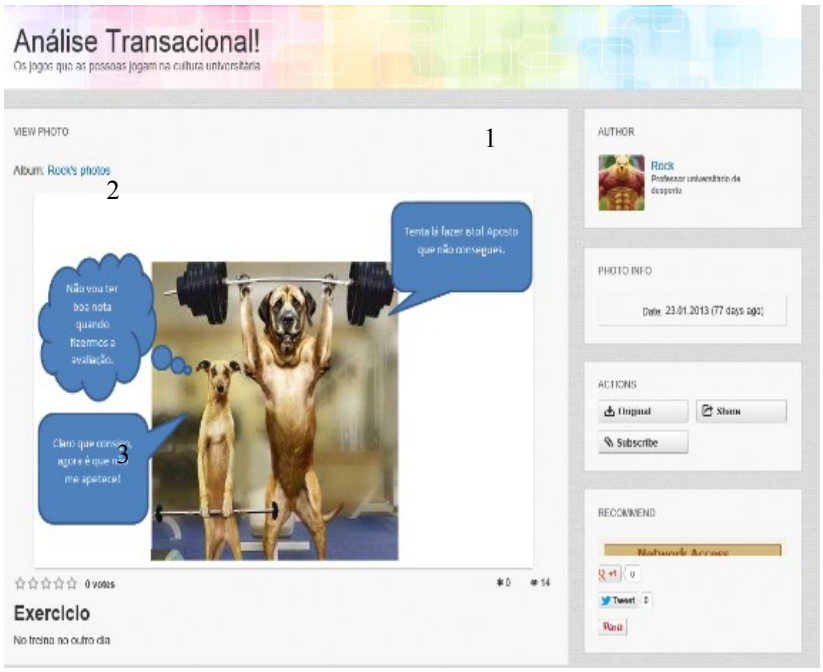


Figure 3. Crop of a published Image.
Legend: 1 – Try to do this. I bet you cannot endure! 2 - I will not have good marks on the evaluation; 3 – Of course I can, but now I just don't feel like.
Blogs e fóruns; 2 Imagens e comentários; 3- Utilizadores e Avatars

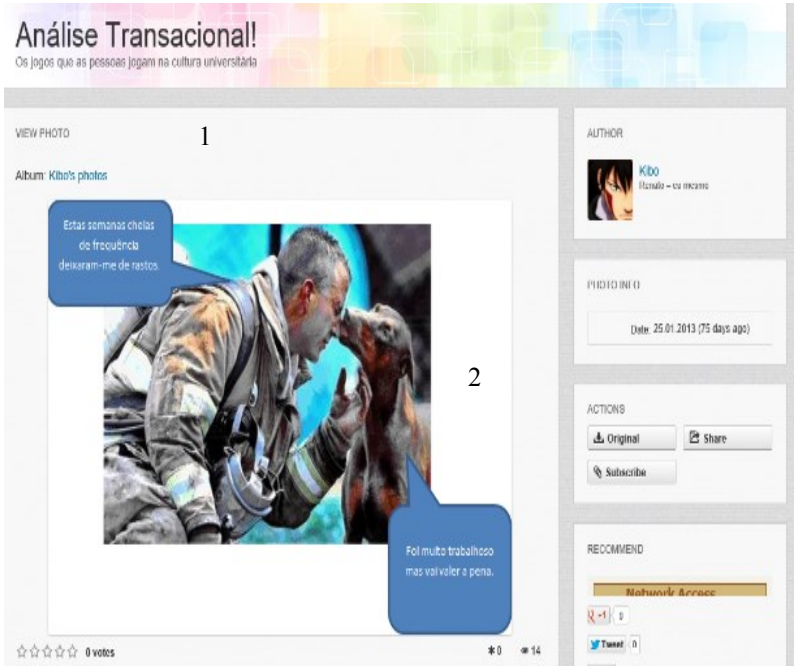


Figure 4. Crop of a published Image.
Legend: 1 –These weeks, full of tests, rocked me to the core; 2 - It was a lot of work but it will be worth.
Blogs e fóruns; 2 Imagens e comentários; 3- Utilizadores e Avatars

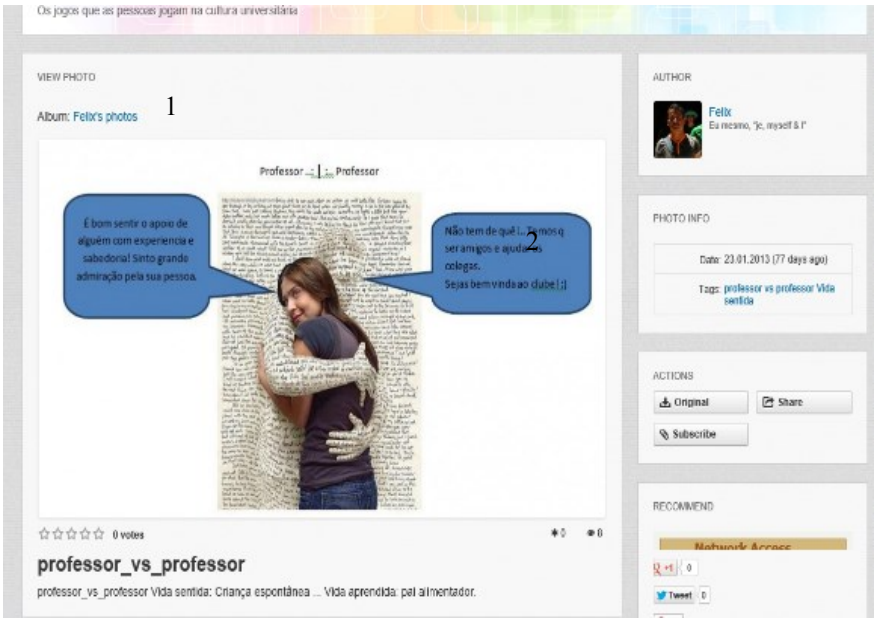


Figure 5. Crop of a published Image.
Legend: 1 – It's nice to feel the support of someone with experience and wisdom! I feel a great admiration for you; 2 - You're welcome! ... We have to be friendly and help our colleagues. Welcome to the club ;); 2- Foi muito trabalhoso mas vai valer a pena Blogs e fóruns; 2 Imagens e comentários; 3- Utilizadores e Avatars

7. Performative photographic creation / Exhibition

Figure 6. Teacher / Teacher: Crossed transaction – spontaneous child with critical parent.
Legend: 1 - Distinguished Professor ... I have a doubt in this part of the matter. Could you give me some help? 2 - No wonder! You took the course in the manner of a politician that we all know.

Figure 7. Student / Student: Crossed transaction – Nurturing parent with rebellious child.
Legend: 1 - So, Joaquim, we are at the end of the semester ... How are you getting away with it? 2 - I don´t care! There is another semester. What I really want is to have fun. Blogs e fóruns; 2 Imagens e comentários; 3- Utilizadores e Avatars

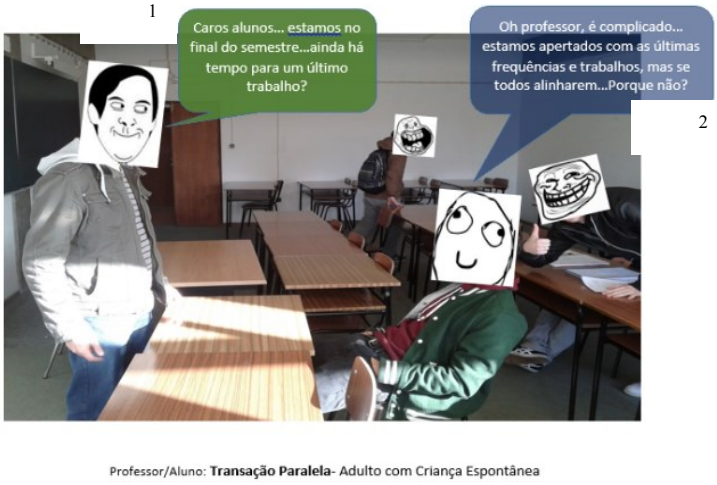


Figure 8. Teacher / Student: Parallel transaction – Adult with spontaneous child.
Legend: 1 - Dear students ... We are at the end of the semester ... is still time for one last work? 2 - Oh teacher! Is complicated ... we're tight with the latest frequencies and works, but if all agree ... Why not? Blogs e fóruns; 2 Imagens e comentários; 3- Utilizadores e Avatars

Figure 9. Teacher / Teacher: Hidden Transaction – Critical Parent with Nurturing parent and spontaneous child.
Legend: 1 - My students do not have any rules or discipline; 2 - It's true! 3 - In your time you should have been much worse!

After the work done within the dolphin platform, the participants, in groups of three, were invited to idealize some performative photographs in several university places.

Masks (memes) and dialogues were added to represent, in a creative way, some possible relationships in the university context, taking into account the three ego-states (parent- adult- child). The final versions of the created photos were then exhibited at the university. Here we can see some examples:

8. Conclusive Dramatization

In order to highlight the most significant aspects of this research, the project ended with a group interview. Later on, the interview transcription was used as groundwork and inspiration for the creation of a joint drama. This dramatic creation was based on the adaptation of an existing youtube documentary with an interview to Eric Berne. Below, is a short passage of this work:

Scene 1 (In classroom with Eric Berne and a group of students).

- Professor Lion (voice-over) Dr. Eric Berne, psychiatrist, creator of transactional analysis and the author of "Games People Play" was invited to visit the Instituto Piaget. During this visit, Doctor Berne spoke with the participants of the dramatic research group. He congratulated their research initiative, especially the idea of connecting the transactional analysis with new technologies. Dr. Eric Berne also gave a lecture about his theory.

Scene 2 (Professors Lion and Eric Berne car tour).

- Professor Lion (voice-over) The known Avatar of Professor Leon and Doctor Eric Berne took a ride through the university campus of the Instituto Piaget. Doctor Eric Berne wanted to visit the city of Viseu.

Scene 3 (Interview on the terrace).

- Professor Lion Doctor ... what do you most emphasize from your joint reflection with the students about this project?
- Eric Berne Well... I'll ... I'll explain ... from the conversation I had with the participants about this research project ... I essentially highlight two or three ideas ... look ... one of the things that was referred by the participants... is that, in this research ... they took greater awareness…greater awareness of their environment ... of the interactions between people in the university context ... they also referred something ... look ...they stressed that ... very interesting ... this project prompted them to reflected on their own past ... their teachers...
- Professor Lion Yes Doctor ... go ahead... go ahead...
- Eric Berne I was explaining that ... fundamentally ... they have reflected about their past academic experiences ... they also talked about other things... they focused the creativity in this research process ... the students enjoyed it ... for example ... (drinks water) ... as I was telling you ... look ... I'll tell you one thing ... one of the aspects that we found really interesting ... and it was stressed by one of the participants ... was the process of creating characters
- Professor Lion Creating characters ... the avatars? ... Are you talking about this?
- Eric Berne (stirring his cup of coffee) ... yes ... I'm ... I'm ... I'm ... I'm talking about that ... (pours milk into the cup) ... I'm talking... hear ... about characters…typical characters ... for example ... the slacker student…the teacher that helps the students ... they also referred the existence of some solidarity ... interesting…

- Professor Lion Yes ... yes ... it was evident in their work. Is there anything else you would like to add?
- Eric Berne Look ... I mean ... yes ... I think that this work should be continued ... It has a lot of potential ... it touches a multitude of complex issues ... so, there are questions that should be deepen ... thank you ... and today we have such nice weather ... thanks.
- Professor Lion It has been a pleasure to have you here… with us ... participating in our research.
- Eric Berne I`m the one that should be grateful ... greetings to everyone ... I wish a great future for these students and for the entire college ...
- Professor Lion Thank you.

9. Conclusion

The work here presented does not intend to reach conclusions in an objective and definite way. It simply relates a specific pedagogical experience based on dramatic processes which included the creation of characters and dialogues. We admit that the social web platforms can be used pedagogically as a resource to intensify the dramatic and imaginative work, revitalising the conventional Interrelationships through the rhizomatic creation of dramatic images and dialogues. Above all, the dramatic blended experience opens new spaces for the educational thought where the past, the present and the future can be combined in an imaginative and critical way, in order to keep alive the experiences that foster the intimacy of the individual consciences on community life.

We should recognize that this work touches the limits of the expected, the convenient, the acceptable and the known. Still, we believe that it is only through the bold challenge that the educational thought can influence the subversive power of interrogation and transgression, which has allowed us to break with the alleged match between seeming and being. And we question: would not be this the crux of drama?

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Networked together: designing participatory research in online ethnography *15*
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Ethical issues in the use of social networks as a field of research: public places or private rooms?

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Abstract. Ethical issues surrounding ethnographic research have long received special attention in academic debates. Such attention has increased in recent years, mainly due to tecnological advances, particularly the internet. The Web has expanded methodological possibilities in view of new research spaces, which add up-to-date problematics to the academic scenario. The post-modern trend of consuming, producing, and commercializing data and images, particularly in Western societies, has grown alongside the development of digital tecnologies and has broadened human predisposition to further exchanges not only of images and data, but also of emotions, beliefs, frustrations, successes, and ideologies. Such behaviour is especially clear in social network websites, whose users are encouraged to record their daily lives and to mediate experiences, perceptions, and meanings. This mixture of "real" and "virtual" results in even more complex limits separating what is public from what is private, and offers important consequences for research studies that focus on on-line environments, given the fact that the methods and guidelines used to regulate ethical issues have undergone changes so as to adjust to digital environments. This feature further complicates decision-making processes in research and increases differences in researchers' opinions regarding their ethical standards. This paper offers some ideas on ethical issues that have come forward while writing my PhD thesis, whose topic is the construction and becoming of non-heteronormative on-line identities in social network websites. Discussing topics such as sexuality and gender requires, because of their very nature, special attention to research data. When such discussions take place in on-line environments, however, they require extra care, because, even though social network profiles are semi-public spaces, they do not necessarily belong to the public domain. This is the point where problems begin, given the difficulty of distinguishing what is public from what is private in such environments. This paper presents my alternatives to solving these issues and states that setting ethical parameters in research studies carried out in digital environments is both important and useful, but should not be restrictive. The reason for this is that the internet makes it more difficult to establish clear and predefined norms because fluidity and decentralization deter unyielding methods.

Keywords. social networks, privacy, ethical dilemmas

1. Introduction

The ethical issues involved in ethnographic investigations have always received special attention in academic debates, but in recent years, as technological advancements have

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expanded methodological possibilities regarding the emergence of new areas for research, other issues and ethical dilemmas have been added to these discussions.

The postmodern tendency to consume, produce and commercialise data and images – above all in Western society – has intensified along with the development of digital technology. Meanwhile, the human predisposition towards exchange – not only of images and information, but of emotions, beliefs, frustrations, successes and ideologies – has been stimulated. This behaviour is especially apparent in social networks, where people are encouraged to document their everyday lives and mediate experiences, perceptions and meanings.

The mix between 'real' and 'virtual'4 confuses the boundaries between public and private sectors even further and this has important consequences for all research carried out in the digital sector, since the methods and guidelines that govern ethical aspects have to be reassessed to fit the online environment. This complicates decision-making in research and exacerbates the differences in opinion between researchers as regards their ethical positions.

My intention in this article is to present some reflections about the ethical questions which have arisen during the development of my doctoral thesis in which I propose to study the construction and future of non-heteronormative digital identities in online social networks. Working with themes of sexuality and gender naturally requires that special care be taken with research data. But in the online environment this care must be multiplied, because although online community profiles are semi-public spaces, that does not mean they are in the public domain. This is where the problems start, because it is not easy to distinguish what is public and what is considered a private environment in the social networking websites. I also explain the solutions I have adopted to counter these problems and argue that while it is both important and useful to establish ethical parameters in online investigations, these should not be restrictive since it is more difficult to establish clear, predefined rules on the internet once fluency and decentralization impede inflexible methods.

2. Research context

The focus of the research is to analyse the construction of digital identities and the way in which non-heteronormative genders and sexualities express themselves through technological mediation and the exchange of cultural repertories in social networks. The questions that guide me are: How do non-heteronormative genders and sexualities register themselves in representations mediated by technological devices? Which practices and modes of subjectivity are considered by subjects for the construction of a

[4] The term 'virtual' is used sparingly in this research as it is a concept that can be understood incorrectly. In the most common, everyday sense of the word it is understood as something that exists, but not physically. It is not something palpable, but rather a simulation of something that already exists. Hence the recurrent use of the term when we refer to what we do on the internet, like simulating events or establishing social relations independent of physical contact. Gilles Deleuze (2006) brought further meanings to the concept. He suggests that you cannot confuse the 'virtual' with the 'possible'. For him, what is possible is already formed; it is already a realisation and only lacks its existence, while what is virtual "is not opposed to what is real, but, on the contrary, possesses its own full reality" (2006: 199). Thus, for Deleuze, what is virtual is not contrary to what is real, but to what is current, and manifests itself as tendencies; it is not ready, but rather in development, and therefore in movement. In this study, the sense given to the concept of what is virtual is not something imaginary; it is something that is deterrortorialised, which depends on the physical means to materialise, yet is free of the classical concepts of time and space.

digital identity that does not ascribe to the prevalent standards in our social structure? In this way, I investigate both how the processes of subjectification shape gender and non-heteronormative sexuality, as well as the participation, interaction and negotiation of meaning towards the elaboration of online identities and their exchanges in the context of social networks.

I undertake this research from the perspective of social constructionism, finding support in the ideas of queer theory and feminism to aid me in reflecting on the daily practices of subjects. From this viewpoint I assume that digital identity is a social construct, elaborated by way of subjective practices and exchanges established online. And, in that sense, the focus of attention is on the users' experiences of existing and moving within social networks, and the ways in which language is organised to build the stories and discourses by which meanings are negotiated.

To develop the project I decided not to focus on a community or specific group and opted instead to create, in January 2010, a multi-sited network – a network of networks – in various Web 2.0 sites. This network is called Desobedientes and it consists of a main website, a personal profile and fan page on Facebook, a Twitter profile, another in Tumblr, and a YouTube channel. The central idea was to develop an identity by means of the same technological devices and practices as those I have proposed to study.

There are various reasons which justify my opting for the multi-sited network. One of these is to understand the dynamic of identity construction from diverse angles, since people find different ways of inhabiting these places, influenced by the characteristics and technical structure of each individual network. Also, the measures people take to construct their identities in the environments where they interact and socialise vary according to the digital context in which they are carried out. Another reason is related to fluidity and movement. Instead of beginning in one environment and passing to another, I prefer to work in a coordinated way, moving from one site to another and experimenting with the different tools available in each environment.

Finally, the objective is strategic, stemming from my intention to act in accordance with the characteristics of each community. As I have stated, each network has its own technical specialities which inform the actions of its users. These specialities depend on the network's specific resources, the services it offers, and its intentions, which differ according to the type of public it wishes to attract. Twitter for example, due to its connection with the immediate, creates an environment more conducive to bringing together multitudes for the exchanging of information. The purpose behind maintaining a profile on this network is to promote and publicise Desobedientes and, above all, to obtain updated information quickly – something that becomes possible once the mutual relationship of 'follower-followed' facilitates the filtering of themes that are interesting for the research.

In YouTube, the intention is to share audio-visual productions, as well as observing how the exchanged videos and the subsequently generated comments gain visibility. It is then possible to see what effects they produce and how they facilitate socialisation and group interests around non-heteronormative identities, without suffering censorship from the mainstream media. The usefulness of Tumblr is in sharing images simply and rapidly, and it is a site with low levels of censorship and restriction. Facebook attracts more users than any social network in the world, and for this reason it is the site in which my observations and actions are most concentrated. However, its closed nature and excessive policies of control and censorship mean that many themes are unable to be developed or discussed there.

Hence the need to maintain a central platform (desobedientes.net) which, in addition to fulfilling the role of presenting details and indicating the investigation processes, also serves to establish relationships of trust. It also allows for the development of discussions that cannot be opened on other platforms due to their possible infringement on the rules structuring those spaces. By buying and managing a URL[5]. I acquire the right to more autonomy in content and data management. The construction of this site also seeks to incorporate the suggestion made by Kozinets (2010, 140) when he defends the importance of providing a channel via which research subjects can get in touch to offer opinions or receive more information about the project. By this token the channel is used to present my research findings to the individuals involved in its processes.

This multi-site network that constitutes my field of study has permitted me to act from different focuses and social contexts, gathering a multitude of people who share the same interest in non-heteronormative genders and sexualities. The analyses are structured according to the choices of users: that is, the ways they use technological tools to construct, present, communicate, make contacts and establish links. The challenge is to make sense of this fragmentation: to make connections between facts and stories without a beginning, middle or an end, without indexes or chapters, and which cross and recross over the social networks, forming narratives that tend towards the pluralistic and diverse.

Methods of observation and interaction are via the use of multiple tools, which are used in accordance with the context: online interviews (via video chat, text chat or messaging services), virtual events (a tool that permits the gathering of a group of people to discuss specific themes), conversations and real-time interactions, among other means. It is important to note that these tools do not have to be used in a specific order or in a particular way; they can even be used simultaneously or in coordination.

Desobedientes is made up of a complex network of interactions and practices, mediated by technologies. Today it has over ten thousand members. This system has allowed me to construct a pluralistic vision for understanding what I propose to study and it has enabled me to move within these spaces. It has also obliged me to confront limitations in decision making, with regards where and how to focus the actions in non-specific geographic contexts[6]. Obviously, this creates complications as regards terms of access, visibility and privacy, and calls for an acknowledgment of ethical and institutional boundaries and an assurance that precautions be taken with the research data.

The ability of both researcher and research subjects to assume anonymous identities or pseudonyms; the complex processes for obtaining informed consent; the illusion that on the internet it is possible to preserve intimacy; and the blurred boundaries between what is public and what is private all combine to enhance the complexity of the interpretations and behaviours to be stipulated. Eysenbach and Till (2004, 1105) point out that making a distinction between what is public and what is private is one of the most difficult and important tasks for research carried out within the social networking environment; notwithstanding, it is formative in the definition of processes. To follow, I describe the guidelines that provide the frame through which I consider these questions and structure the ethical parameters guiding the research.

[5] The acronym URL stands for Universal Resource Locator and refers to the method with which the Web identifies and locates any type of file or resource, wherever it may be in the world.

[6] In *Desobedientes*, the only impediment was language, since the network was constructed for a Spanish-speaking public.

3. The ethical guidelines which steer my actions in the Desobedientes network

I believe that the principal objective of any piece of research is to build knowledge for the benefit of society and, for that reason, it should not cause harm to the subjects involved in its processes – without whom the research would be impossible to carry out. To perform research within a digital environment adds another obvious, yet very important issue: it must not be forgotten that data is provided by real people, not a computer. Therefore, decisions are considered in relation to these people, ensuring that the results do not harm anyone.

Some collectives and individual initiatives look to shed light on the realm of digital research. One of these is the Association of Internet Researchers (AoIR)[7], an international organization founded in 1999 by a group of investigators dedicated to advancing transdisciplinary studies on the internet. They carry out annual conferences in order to promote online discussion, reflection and collaboration. The central focus of their concerns is with ethical questions in internet research and, in 2002, they created a guide entitled *Ethical Decision-making and Internet Research Recommendations from the AoIR Ethics Working Committee*[8], which serves as the primary source of reference for many researchers. In 2012 they published the report: *Ethical decision-making and Internet research 2.0: Recommendations from the AoIR ethics working committee*[9], in which the authors propose some guidelines on the taking of ethical decisions in research based on Web 2.0 devices.

Adolfo Estalella and Elisenda Ardèvol (2007) form part of a group of researchers who argue that the distinction between what is public and what is private has become one of the key elements in guiding ethical decisions. Therefore, they state, the level of responsibility of the researcher in relation to the data they find available online must be established based upon that distinction. The authors remind us that private data refers to that which requires permission for use, just as with investigations carried out in a face-to-face environment. They also maintain that research subjects should be informed about the objectives and intentions of said research – since rules for research carried out online are no different – and that it is important to follow the basic principles which determine what can or cannot be collected without asking permission.

Other authors signal the need for research carried out in Web 2.0 to be sensitive to context, with its ethical procedures structured so that their principles and categories are useful and meet all the guidelines in the ethnographic research (Snee 2008), while not becoming restrictive to the point at which the research becomes invalid.

In order to establish ethical guidelines, I have sought to follow all these recommendations, as well as the suggestions made by Kozinets, who in the book *Netnography: doing Ethnographic Research Online* indicates some ethical principles for netnography: (1) the investigator should reveal his or her identity and intentions to the members of the online community; (2) he/she should ensure the confidentiality and anonymity of subjects; (3) he/she should obtain consent when necessary, and, (4) properly credit a community member when quoting them and attain their permission before using specific information. (Kozinets 2010, 140).

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[7] More information: http://aoir.org/.

[8] Authors: ESS, C. and the Ethics Working Committee (AoIR), produced in 2002. Available at: http://www.aoir.org/reports/ethics.pdf

[9] Authors: Annette Markham and Buchanan Elizabeth, with the collaboration of the Ethics Working Committee (AoIR), produced in August, 2012. Available at www.aoir.org/reports/ethics2.pdf

In practice, the focus of recommendations made by researchers working in a digital environment follows the same principles as with traditional ethnographies, such as: respect for research subjects, data security and the privacy of individuals. Nonetheless, these fundamental principles become complicated when managed in the social networks, because it is not easy to answer questions such as: What are the appropriate strategies for protecting research subjects? Can information available in user profiles with no security restrictions be considered public in social networks? What kind of internet interactions are public and do not require informed consent? What types of records can be made without the need for requesting consent? What kind of information can cause harm in the life of a non-hetereonormative person who is not publically out of the closet (even if in their profile their non-normative sexual orientation is made clear)?

The fact is that Web 2.0 social networks blur the barriers which differentiate public from private and thus complicate ethical decision-making. Moreover, the divergence of researchers' opinions does not help make the context any less blurred, since there are those who argue that data found on the Web 2.0 without access restriction should be considered as being in the public domain and that there are therefore no ethical problems with collecting and analysing it. However, my conscience dictates that even though this data is publically available, it does not mean I can use it without criteria as part of the research process, especially since many social network users are unaware of the need to ensure a degree of privacy in their profiles. Many users do not read the "terms and conditions" or know how to use the tools that restrict access to their information.

As a result of these concerns, I decided to position myself from a contextual perspective, based on the recommendations of the AoIR. They suggest thinking of ethical decisions not as formulas but as guidelines which respect – and are sensitive to – context, their argument being that there are often actions which are defensible for specific dilemmas or problems in internet research, and in which "ambiguity, uncertainty, and disagreement are inevitable":

> In this light, it is a mistake to view our recommendations as providing general principles that can be applied without difficulty or ambiguity to a specific ethical problem so as to algorithmically deduce the correct answer. (Ess 2002, 4)

In order to establish the ethical guidelines, my main concern has been to protect the subject under research, particularly as regards their profile. To this end, all care has been taken to ensure that recorded data does not reveal the subject's identity or cause him/her harm in the future. Moreover, I opted to make my own identity public and provide clear, visible information regarding the objectives of the project in order to establish a relationship of honesty and trust between myself and the members of *Desobedientes*. Thus, in the description of the profiles that make up the network, I explain that it is part of a piece of academic research, and I explain my intentions so that everyone is aware they are taking part in a research project. In this description I introduce myself and assume responsibility for safeguarding personal data, keeping subjects anonymous and, in the case of images, asking subjects their permission before use. This is the text that accompanies all the profiles in the *Desobedientes* network:

> Hello everyone!
> My name is Carla de Abreu and I'm a PhD student at the University of Barcelona. This profile is part of my thesis project which proposes to consider the construction of non-heteronormative gender and sexual identities in digital social networks, through the lens of visual-culture studies and Queer theory.
> I am very interested in knowing more about the everyday subjectivity practices of subjects who disobey the heteronormative rules of online social networks. In these spaces, everyone can experiment with many ways of developing the 'I', and this creates opportunities for the construction of other femininities and masculinities. I believe that the information I am trying to gather can help those who are interested in understanding how non-heteronormative genders and sexualities live, and are perceived, on the internet.
> I guarantee that all collected data (comments, debates, images) will be totally confidential, and, if quoted, will be credited with a pseudonym so you will always remain anonymous. Permission will be asked before using your images in the published research.
> I would be happy to share my findings with you. If you are interested, please send me an email. Likewise, if you have any questions regarding the investigation, please feel free to write to me: carlaluzia@gmail.com.

Thus, the community members are aware of my intentions. What I hope is that everyone reads my description upon becoming a member of the network. By choosing to reveal my identity and explain the research objectives, I have, of course, lost many opportunities to establish interactions and collect data that could be important in the analysis process. However, omitting my intentions would not seem to me to have been an honest approach.

In this research, images of online identities and photos from personal albums have been considered private data and thus requiring consent for use; as have individual interviews, emails and private messages. Fragments of texts, upon which I build my inquiries and reflections, count as public information once individuals who pass through the *Desobedientes* network are aware that they are in an academic research environment. However, at all times the proper analytical approach has been used in understanding the contextual nature of each text and recognising when it contained something personal and not suitable for use, thereby ensuring that people's privacy was not put at risk or the established bond of trust broken.

Attaining informed consent has involved a variety of processes in different contexts, demanding differing strategies. However, my main means of gaining permission has stemmed from my coexistence with subjects on the network and the exchanges I have engaged in with them in order to offer further explanations regarding the project and my intentions. As a result, permission has been given via many methods, bearing in mind that "informed consent does not necessarily imply or require a particular written or signed form. It is the quality of the consent, not the format, that is relevant" (AAA 2009, 3). In all cases, it has been important to explain the details of the investigation, as well as the ways in which the data is to be used in the thesis. Another decision that I consider important has been to offer a form of direct contact – as a commitment to keeping everyone informed about the progress of the research and clearing up any doubts that might arise – via the website constructed for this purpose.

The values underlying the ethical principles of this research project are made clear from the start and I am aware that this imposes limits that cannot then be disregarded. Nonetheless, I believe this has been a successful strategy, allowing me to move through different contexts with a certain degree of flexibility, while freely exhibiting the principles I have adopted. These principles are based on a willingness to share experiences and opinions with the individuals who form part of *Desobedientes* and who have collaborated voluntarily to help build knowledge, and they are also based on respect for the privacy, intimacy and autonomy of everyone.

4. Final notes

To define what is public or private in the social networks is complex and there is probably no way of establishing general ethical guidelines which serve for all forms of research, since each project has its own specificities and nebulous areas. Furthermore, ambiguity and uncertainty are an inherent part of the research process in a digital environment.

It must be emphasized that my choosing to reveal my identity and intentions comes from my understanding that individuals who have formed part of the processes and collaborated with the analysis have the right to know they are taking part in a piece of research, and therefore also have the right not to participate or to request that their data not be collected. To comply with this decision I have made a commitment to transparency. This commitment implies a responsibility to research subjects – the principal sources of reference for the research. I think that rather than making me vulnerable, this decision has in fact strengthened my identity in the field of study and opened up other opportunities which might not have been possible had I kept my identity and objectives secret.

This positioning in the investigation stems from the idea that the researcher should not take the role of 'data-thirsty vampire', but instead be prepared to offer and give, as in the sense of mutuality proposed by Forte: "courtesy can be the basis for reciprocity, for example, even in the absence of palpable amiability." (2004: 230) In this regard, I can say that courtesy and mutuality are entirely consistent with the constructionist perspective that guides my positioning in this thesis; a positioning which understands that mutual exchange, reciprocity and collaboration are the cornerstones upon which we build knowledge.

The fact is that the contextual nature of the technologies and the fluidity and complexity of the 2.0 tools create situations which change rapidly, making *a priori* strategies an impossibility. As a result, the ethical decisions in this investigation have been constantly readjusted to fit the diverse contexts which make up the *Desobedientes* network. There has been no single formula or recipe. What there has been is a search for more flexible processes to suit different circumstances, influenced by the practices and exchanges of the users.

In this article I have sought to outline the main considerations that have arisen regarding the ethical dilemmas that I have encountered during my experience in the field of study. It has not been my intention to offer a guide to ethical conduct in research studies which use the same types of devices. Rather, my objective has been to explain the conflicts I have faced; to highlight the importance of ethical decisions in social network-based research; and to describe the choices I have made, whether they have been right or wrong.

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Cartography mediated by digital technologies: new perspectives for ethnographic research

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Abstract. This paper presents some approaches to the establishment of research and new procedures involving the use of applications (App) and mobile devices (netbooks, tablets and smartphones) for ethnographic research. It is situated in the context of ongoing research "Augmented School: digital cartography and mobility for learning and citizenship" (supported by CNPq/CAPES and FAPERGS), which aims to develop a work with students and teachers at a school that received netbooks for educational use on a "One-to-One" initiative. With the development of mobile technologies, geolocation (GPS, locative media) and distributed databases online (cloud computing) arise new possibilities for the production of records and interactions in the field of ethnographic research. At the same time the diversity of the type of digital records (text, photo, audio and video) allied to mechanisms for indexing and markup (tags, hashtags, geotags, etc.) open new possibilities of research, it also requires from participants understanding of syntax and new technological procedures for the production, recording and sharing of information. Some applications for mobile and desktop computer programs (such as NVivo and Evernote) can facilitate this process, while that may contribute to the planning and organization of this production. Parallel to the discussion of these new technological possibilities and knowledge necessary for researchers, we are interested in the establishment of participatory research methodologies capable of engaging researchers and subjects in the production and analysis of data. We think that the current technological context may be able to consolidate a new scenario in the field of research, in which researchers and subjects to act as co-producers of knowledge. In this sense, the cartography mediated by digital technologies emerges as extremely rich methodological possibility as it implies the inclusion of social actors in the context of engagement with local issues and problems. Such engagement would be a necessary condition for the production of meaning through the shared and mediated use of digital technologies in the process of knowledge construction. We believe that this scenario can reconfigure both the research itself and the contract between researchers and subjects, as the action and participation become instances of authorship from which all speak and produce.

Keywords. digital ethnography, mobility, participatory research, education, locative media.

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1. Introducing the research scenario

During the past five years combined actions have been taking place in Brazil in the sense of developing digital inclusion policies throughout schools. Among those actions there are two that stand out: Broadband for Schools Program – that hired internet access plans from local telecommunication operators – and the One Computer per Student and Teacher Program (PROUCA) – that made low cost netbooks available to some of the Brazilian public schools. More recently, the State Government for the State of Rio Grande do Sul (RS), within the actions in the More Digital RS Program[11] has launched the Província de São Pedro Program (PSP)[12], having been developed by the State's Bureau for Education and Culture (SEDUC) and accounting with the support from the Bureau for Communication and Digital Inclusion (SECOM). The PSP has the intention to make netbooks and tablets available, by the year 2014, to all students and teachers located on the borders with Uruguay, and in the cities that develop Territory of Peace Programs (PTP). Besides the gadgets, the teachers will be also offered training on the pedagogical use of digital technology.

PSP has already been implemented in the schools by the border with Uruguay as well as in some schools in the city of Porto Alegre and metropolitan area. In the year 2013, in the metropolitan area, two schools – in the cities of Esteio and Sapucaia do Sul takes part in the PSP [13]. This school received two hundred netbooks in July 2012[14] and the 16 teachers have undergone an initial training carried out by the region's Education Technology Center (NTE). The school is located in the central area of the city of Esteio, being three kilometers away from the regions Parque Primavera and São José, where the PTP also takes place.

Since the beginning of the PSP it has been established that it would start developing from schools in the border with Uruguay for the neighbor country had already started implementing a similar program – saturation model 1:1, one computer per student and teacher – providing netbooks for all teachers and students in public schools. The organizer's idea was make Brazilian schools profit from the positive reflection the Uruguayan program had been having in the local community's schools from that region. Such model or saturation strategy – of one region, collectiveness or institutional networks – is one of the principles of the 1:1 model, sustained by the idea that such strategy would make the construction of different learning networks easier. However, when it was announced that the second criteria would be the development of PSP in the same cities which were developing the PTP, a circumstance has been revealed which differs from the other experiences related to the 1:1 model. The announcement raised some issues within our Group of Digital Education Research (GPe-dU/PPGEDU/UNISINOS). What is the point of developing a saturation model 1:1 in schools close or located within the Territories of Peace? What relationship can be established between the digital inclusion policies (such as the PSP) and the public security policies (such as the PTP)? Moreover, how would the use of mobile gadgets (tablets, netbooks, laptops, smartphones) proposed by the PSP stands before issues related to the violence faced by young people living in these Territories of Peace?

Starting from these first questions we develop a research project called "Augmented School: digital cartography and mobility for learning and citizenship"

[11] http://bit.ly/TK7TFM
[12] http://www.educacao.rs.gov.br/pse/html/proj_provincia.jsp
[13] http://goo.gl/maps/9GRGV
[14] http://www.educacao.rs.gov.br/pse/html/noticias_det.jsp?ID=9427

with which we intend to research the possible issues that may raise from the actions addressed by the principles of digital culture towards the local ones, the citizenship and pedagogical practices in schools located in the cities that develop the Territory of Peace Program (PTP). Therefore our plan is to implement and develop, in a participatory and propositive way, along with administrators, professors and students from such schools, a methodology based on the cartography method of research and intervention (Kastrup 2007; Kastrup 2008), which we will later approach.

The idea of developing an ethnographic based research within a context involving problematic fields of different orders (digital inclusion and public security) has appealed to be instigating. On the other hand, how could we address the intensity and the diversity of the forthcoming socio cultural process towards the actions proposed by the public digital inclusion policies and of violence fighting within an unknown context to us, and in a short term? Meaning approximately the two years scheduled for the execution of such governmental programs. It was clear to our group that the way to the participatory research was not only a political or ideological will of giving voice to the subjects, but also as an epistemological need that would make us build up a theoretical-methodological design suitable to the demand of the empiric field on which we would be in. This way, one of the research's first steps, still unfinished, was to arrange processes and instruments that could lead the researchers' team (professors, students, scholars and associates) in the production of data mediated by the same digital technologies currently being used in the schools from the PSP. Based on this arrangement and on our theoretical-methodological and technological knowledge we were about to acquire, the idea is to be able to act in a constructive way along with the responsible for the PSP previously mentioned, either directly in the school communities involved, or together with the managers and teams assigned by the State Government Agencies.

The present article sheds a light on this first arrangement with which we are all engaged, meaning we will work to present the theoretical-methodological and technological ways we are going through in order to present and discuss the cartographic method of research and intervention mediated by the new digital technologies as a possibility of participatory research under ethnographic basis.

2. Building up the cartography of the digital inclusion and public security policy

Given the complexity of the human and social phenomena, an equally complex methodology should be taken into consideration. Latest discussions on the dimensions of human subjectivity indicate the need for methodologies that are able to follow up and record subjects' paths and collectiveness within a given context. This way, the cartographic method proposed by Deleuze and Guatarri (Deleuze and Guatarri 1995), and which has been investigated in Brazil by Kastrup (Kastrup 2007; Kastrup 2008; Passos, Kastrup and Escóssia 2010) among others, has appeared as a possible way for what we intend with our research. When presenting the cartographic method Kastrup describes:

- Cartography is a method which aim is to following up a process, and not representing an object;
- Generally speaking it always investigates a production process;
- No linear path is followed in order to reach an end;

- "Cartography assumes a strict method without giving up unpredictable issues inherent to the process of building up knowledge, which constitutes a positive demand on the investigation process ad hoc" (Kastrup 2007, 19);
- Its customized construction does not impair it to establish leads with the objective to describe, discuss and, overall, communicate the cartographer's experience;
- It is based on the S. Freud's concept of free floating attention, H. Bergson's concept of attentive recognition and on the contribution of the phenomenological field of modern cognitive science;
- The cartographic attention is defined as open and concentrated, being known by four varieties: tracing, touching, landing and attentive recognition.

In order to carry out an initial cartography, based on the above stated, we traced the Internet for clues which could lead to possible nexus or meaning for this digital inclusion policy from the Província de São Pedro Program (PSP) in social contexts identified as violent and social vulnerable, particularly when developed in actions within the Territory of Peace Program (PTP).

> The Program "RS Mais Digital" ["More Digital RS"] has as main objective "To implement public policies that allow access to the Internet in a way to bring government and society together, promoting citizenship in the construction of the social and economical process in the State of Rio Grande do Sul. [RS]" This Program aims to broaden the population's access to the Internet through day by day actions and strategic projects, pertinent to the previously exposed proposal. [translated by the author.] (SECOM 2013)

Figure 1. Registering a webpage research with Evernote. Source: the authors.

The first clue we followed was to look for information about the Program "RS Mais Digital" in the website of the Government of the State Rio Grande do Sul, for we knew the PSP was one of the actions related to this Program. Besides providing the main objective of the Program "RS Mais Digital" the website also brings a link appointing to an action called Paz.Com [15]. The page informed that the action is promoting, in the Peace Territories, "community workshops" addressed to young

[15] http://www.secom.rs.gov.br/conteudo/1162/paz.com

between 14 and 19 years old, including basic concepts of photography, blog/networks, text, video and audio. According to the website, the intention of the Project is to foster "digital and electronic communication training for the youth, encouraging juvenile protagonism and enabling the experience of creating and managing a communication media" (SECOM 2013). The intention is to organize such workshops in all Peace Territories by the end of 2014.

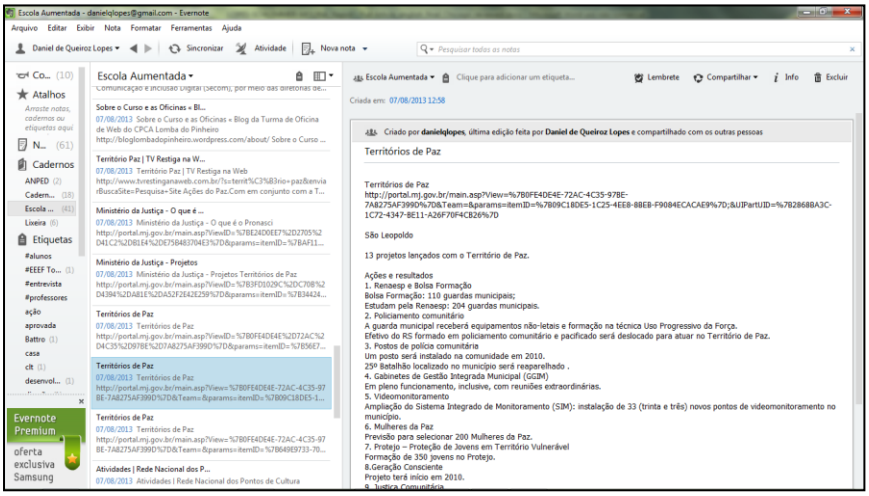

Figure 2. Evernote desktop interface. Source: the author.

Instead of merely adding the link to the bookmark of the web browser, we have used the application Evernote[16] in order to store and share these first clues, and we used its extension (plugin) for the Google Chrome[17] browser to insert a note on the online database (Figure 1). This database has been previously configured through the Evernote and identified by the name of Augmented School (in Portuguese, Escola Aumentada). Once having been created, the area in the system provided by the Evernote can be shared with other users registered in the system, who can then record their own notes. The note created can be accessed through a browser in desktop computers (Figure 2) or through mobile devices with iOS or Android systems (Figure 3). The notes can be added other media, such as audio, images, tasks to be accomplished, localization (geotag) and text comments. The Evernote, within this research context, fulfills the role of the field diary, with the possibility to integrate records in different media. The data collected can be exported to a table and later imported by other programs (such as NVivo) for their due categorization and analysis. This way all the research carried out on the Internet can be recorded and noted down in a dynamic way and also shared – with traces that become clues for the whole team.

> Tracing is an in-field swept. It can be said that the tracing attention aims a type of goal or mobile target. In this sense, to practice cartography involves an ability to deal with constantly oscillating targets. [...] Locating leads and processing sings is important for the cartographer. [translated by the author.] (Kastrup 2007, 18)

[16] http://evernote.com
[17] http://www.google.com/chrome

From the links we follow up we can trace several clues possible to map, in the first instance, a digital inclusion policy. As we have previously stated, it has called our attention having a digital inclusion program associated to a public security program. The first meaning we could build between both regards the description of the objectives of the Program "RS Mais Digital" and the Project Paz.Com. The first one establishes, as it main objective "integrate government and society, enabling the exercise of citizenship in the construction of the social and economical development processes", whereas the second one intends to encourage "juvenile protagonism" through the learning about the generation and management of a communication media. It is possible to perceive an alignment between the Project and the other objectives of the Program, for they all try to promote citizenship in the youth attending the Peace Territories by encouraging them to be the authors in digital media. It is important to highlight that the State digital inclusion policy is linked to the communication agency, and that justifies the policy being oriented for communication strategies and for the juvenile protagonism in this field. Such communication strategies can be seen in the integration of the actions involving the production of digital media, mainly through blogs created in workshop[18] and in the broadcasting of programs through the community's radios and TVs[19].

By following up the traces of this regional policy of digital inclusion we have come into the gate of the Brazilian Ministry of Justice (Ministério da Justiça do Brazil) where we have found information related to the Territory of Peace Program (PTP). This Project is inserted in the field of actions of the National Program of Public Security with Citizenship (PRONASCI), which aims to face the criminality issue by developing security policies (policing, surveillance, monitoring technology, among others) with social actions together with States and cities. The PTP is a project that forces several projects to get aligned to this policy of actions in order to foster citizenship. We call the attention to those related to cultural development as the Culture Points, Community Museums – Memory Spots, Centers for digital inclusion, Project Cine+Cultura (Film+Culture), among others. We can perceive that the PTP integrates actions to increase participation in these spaces of cultural performances in places that have been identified by violence and criminality. Under this perspective it is possible to understand that the regional policy of the State RS is to link digital inclusion policies to the promotion of local cultural development.

This way, the policy of encouraging protagonism and citizenship proposed by "RS Mais Digital" and related projects, as we so far can understand, is aligned to the national policy for public security regarding the Peace Territories. However, it is not yet perceivable when the actions of the Província de São Pedro Program (PSP) will meet with the actions addressed to the PTP. Both projects take part of the actions for the project "RS Mais Digital", but the PTP, through actions such as Paz.Com are addressed to community groups, not necessarily to schools.

> Like an antenna, the cartographer's attention makes an asystematic exploration of the ground, with rather random movements of passing and re-passing, with little concern with possible redundancies. Everything flows that way up to the point that the attention, in a receptive attitude, is touched by something. The touch is felt as a quick feeling, a small

[18] http://bloglombadopinheiro.wordpress.com
[19] http://www.tvrestinganaweb.com.br/?s=territ%C3%B3rio+paz&enviarBuscaSite= Pesquisa+Site

> epiphany that will first hand trigger the selection process. [translated by the author.] (Kastrup 2007, 19)

We feel the need to broaden (landing) what have been happening within the context in the regions benefiting the PTP and PSP, in order to analyze the processes carried out to implement those projects. We focus our attention in the city of Esteio-RS, because, as previously stated, we have heard that in that city both projects have been developing.

Figure 3. Evernote smartphone interface. Source: the author.

3. Territories, local culture and digital cartography

> The gesture of landing indicates that perception, either visual, listening or other, makes a stop or the field closes, in a type of zoom. A new territory is formed and the observation field is reconfigured. Attention changes its scale. […] Anyhow, it is necessary to reinforce that every moment in the attentional dynamics it is the whole territory that reconfigures itself. [translated by the author.] (Kastrup 2007, 19)

One of the first movements taken in order to approach the region of Esteio was to spot in the map where PTP and PSP were happening (Figure 4). The first idea we had was that both actions were being carried out in the same place. It was not what we have found out, though. The school where PSP is being developed is around 3km far from the place there the PTP is being developed, as we can see in Figure 4. This clue reinforces our question about when the actions of one project meet the ones from the

other one. In spot "D", there is the Escola Estadual de Ensino Fundamental Tomé de Souza (Primary Public School) that received netbooks in 2012 and takes part in the PSP; the spot "B" is Primavera District, first region in Esteio to develop PTP, since 2009; and in spot "C" is São José District, which has been developing PTP since the end of 2012.

The development of the projects seems to follow, up to the present time, different paths. The results of the actions related to PTP are often published in the city hall and State government websites. A Community Center and a Reference Center for Social Assistence (CRAS) were created in Primavera District where actions of the PTP are housed, such as the ones involving legal assistance, the Program to protect the youth in vulnerable territories (Programa de Proteção aos Jovens em Território de Vulnerabilidade – PROTEJO), sports and leisure, among others. Among the actions related to education and culture the City Centers of Basic Education (Centros Municiapis de Educação Básica) in the area develop the Project Mais Educação (More Education) – which offers artistic, curricular and sport activities as after school activities, the Open School (Escola Aberta) – which encourages schools to open on weekends for activities integrated to the community's needs – Education of Young and Adults (EJA) and the Integrated Program of Social Inclusion (PIIS) – which offers free cultural workshops and activities for young and children. As a result of such actions of public security and culture, the government presents data that shows a decrease in criminality indicators, including homicides. It was not possible to identify, among the actions published in the web, a single action within this territory directly related to the PSP or to digital inclusion. The only information related to PSP was about its implementation in 2012, when Tomé de Souza School received the computers and the teachers were trained.

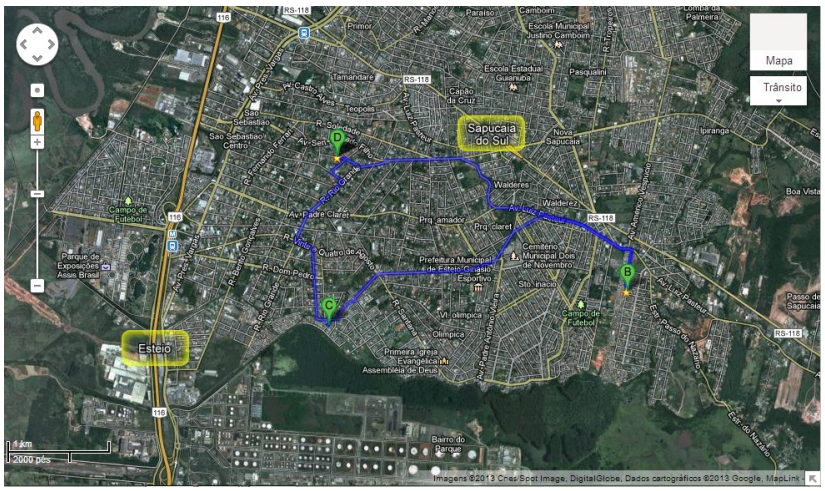

Figure 4. Places at Esteio-RS City where it has been developed PSP and PTP. Source: Google Maps[20]

One of the clues we found out when tracing the actions related to the PSP and PTP was a service created by the State's Bureau of Culture (SEC) and the Company of Data Processing in the State RS (PROCERGS) called Digital Map of Culture in RS[21]. The

[20] Obtained at http://bit.ly/10RLrfI
[21] http://www.cultura.rs.gov.br/mapa/#lat=-30.293609699999674&lng=-53.88029040000009&zoom=7

intention of this service is to make a collaborative mapping platform for spotting places and cultural associations available for the population. This way, the platform works both for the population to spot in the map points of social and cultural interests, as well as for the State to better define public policies to fostering culture. The collaborative platform also enables the population's participation that can, through mobile devices with geolocation technology (GPS), inform on cultural places within their region. The service has the following some pre registered cultural categories: Library, Cultural Spot, Archive, Institution of the Bureau of Culture, Cinema, Public Files Center, Theater, Cultural Center, Museum and Social Group. It is interesting to notice that, among the pre registered categories there is not "School". In a certain way, as we move forward in this cartography, the issue we were following of - when will the actions from PSP and PTP meet – turns into an uneasiness affecting us: are the actions from one project ever going to meet the other ones? Why aren't schools listed among the categories identified as "territories" or "cultural spots" in the Digital Map of Culture in RS?

> The attentive recognition is the forth action or attentional variety. […] The cartographer's investigative attitude would be better described as "let's see what is happening", because their main purpose is to follow up a process and not representing an object. […] Wondering around a city we are well familiar with and where we can easily move around without paying big attention to the paths we follow is an example of that attitude. As for a cartographer it is not about prompt recognition, because he has the purpose to mapping a territory which was initially not inhabited. It is not about moving around a known city, but to generate knowledge to a long research way, involving attention, and the creation of the observation territory as well. [translated by the author.] (Kastrup, 2007, 20)

This uneasiness has trigged us to carry out a new movement of searching the recognition of the cultural spots within the regions in Esteio where PSP and PTP are developed within this cooperative platform. To have a clearer idea of our findings we have compared the map of Porto Alegre, the State's capital, (Figure 5 and Figure 6) with the one of Esteio (Porto Alegre's metropolitan area).

A first evidence of such comparison regards the amount of dots marked on the map. Whereas Porto Alegre has dozens of marked dots, the city of Esteio has only the city library. Besides having these evidences, it is important to clarify that cultural and spaces or associations not showing on the map does not mean they do not exist. We have just listed the spaces addressed to cultural actions of the PTP created in the Primavera District. What may be happening is the non recognition, by Esteio population, of such platform of collaborative mapping. Furthermore, there may be a lack of using mobile digital gadgets with that purpose. It is more likely that both are happening.

Our restlessness about the meeting point between the PSP and the PTP seems to encounter in this collaborative and participative platform a possible solution that meets the needs of our project and research's goal. It is fact that in Brazil the Cultural and Educational policies diverge in several aspects, since the creation of separate ministries and government teams, until the actions that are created within city and state governments. This way, the fact that the actions related to PSP are located mainly in schools, could lead to the lack of results appearing in the Culture's Digital Map of RS. Literally speaking, if the actions from both programs do not converge, the PSP can take

over the map, the same way the category "school" has. It is obvious that this integration of actions demands both policies to communicate to each other in a way that schools and education are understood as categories directly related to culture. In this sense, an interesting action that could be implemented in the PSP was the organization of workshops in order to recognize the city territories where cultural activities could take place, as well as the establishment of Culture Spots (Pontos de Cultura)[22] wherever possible. Under this perspective it is possible to understand cartography as an activity that can manage changes of meanings around the place we live, and one of the reasons to think about the idea of Augmented School.

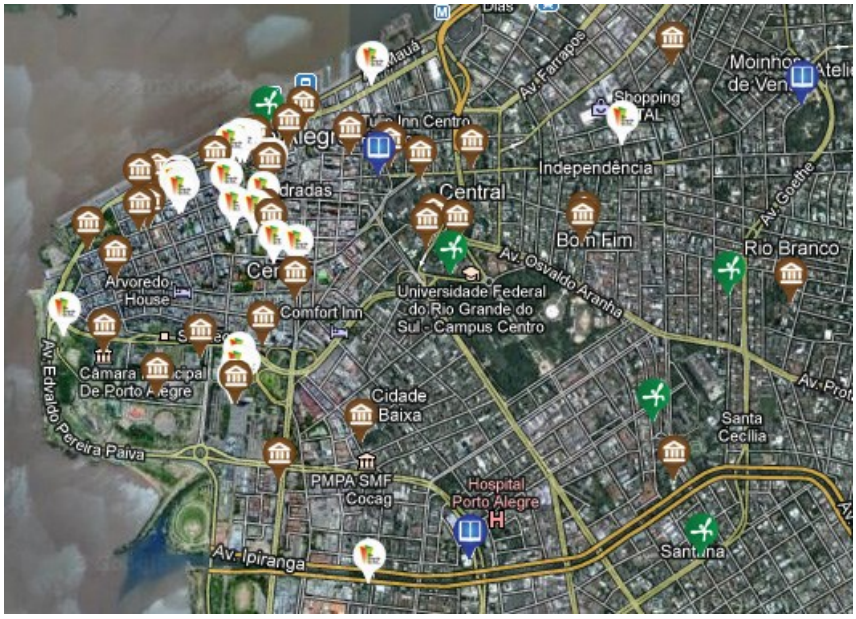

Figure 5. Digital Map of Porto Alegre downtown's culture spots. Source: PROCERGS [23]

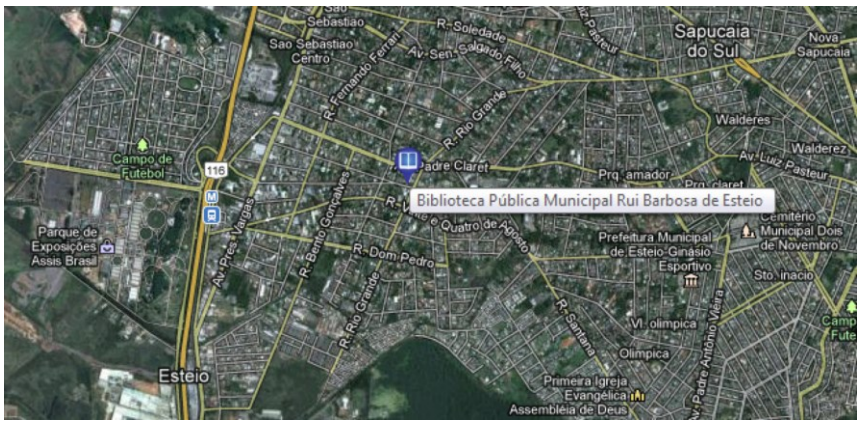

Figure 6. Digital Map of Esteio City's culture spots. Source: PROCERGS[24]

[22] http://www2.cultura.gov.br/culturaviva/ponto-de-cultura/
[23] Obtained at http://bit.ly/17YL9eM

4. Augmented School: the cartography and the reconfiguration of territories

Up to the present time we have traced some of the actions related to the contexts of programs Província de São Pedro (PSP) and Territory of Peace (PTP). At the same time we present our path when mapping, we also bring some theoretical elements defining the cartographic method of research and intervention, and also technological ones such as: Evernote as the instrument working as the field diary, Google Maps for digital geolocation, and the government websites. According to our initial proposal, the idea of building up a referential which is theoretical-methodological and technological has found in the cartographies the suitable epistemological basis to the research we develop. However, the constitution process of both public policies and the creation of PSP and PTP is not limited to digital sources (government websites), which is something that cannot be taken for granted to avoid the risk of mixing up the product with the process. The traces and clues we have followed so far regard more to conceived products and ideas being used in both community and school contexts. It is then important to highlight that the core analysis of this research is not on the process of building up such policies, but in their development within communities and schools. The next step, beyond what was herein developed, is to make the cartography of the places where PTP and PSP are developed in the city of Esteio-RS, including not only political actions but also the actions developed by the residents from those territories. But as a first step it was necessary to map the actions of the policies in order to raise the problem and understand its development within those territories.

By raising the issue, though, we haven't yet clearly identified how and if the actions of the PSP and PTP are converging. The first converging possibility would be the project Paz.Com, but this project is so far applied more to the PTP community actions to the ones related to schools and the PSP. A second possibility was to develop actions related to creating the collaborative cartography based on the platform Digital Map of Culture in RS. This second possibility looks more possible and would assure more autonomy when proposing actions among schools taking part of the PSP. At this point the intervention and participation poles are connected to the cartographic method we haven't so far addressed and which we are currently developing under the scope of the research on Augmented School: digital cartography and mobility for learning and citizenship.

We have previously presented in Figure 6 the Digital Map of Culture in the city of Esteio, taken from PROCERGS collaborative map, where initially only the city library was spotted. However, after the actions of the PTP it was possible to spot several cultural places and associations in the map. Parallel to that the public school Tomé de Souza, among PSP actions, has received notebooks and Internet access, but up to the present time no other actions regarding teachers' training were taken. In order to contribute for the development of both governmental projects wouldn't that be the case to creating conditions for the local community to take over this participation instrument created by PROCERGS? What effects will be risen from the attentive recognition of the territories they live in? Furthermore, will the cartography action mediated by digital technologies reconfigure those territories?

In order to clarify from where we have started and why we have come to the present research let us shed a light in what has motivated us on doing this work.

[24] Obtained at http://bit.ly/12JjYQE

Between the years of 2010 and 2012 we have followed up some of the actions promoted by the Federal Government in the scope of the One Computer per Student and Teacher Program (PROUCA). One of the aspects we can detach as evident in all four schools we have observed was that the mobility expected of the possibilities offered by the mobile device were not fully explored (Lopes & Schlmmer, 2012). The netbooks were extensively used in the same way desktops computers and the Internet is. Lack of web access outside school and distributed around the city can be appointed as one of the factors affecting the referred mobility. Although, even within the school area where the signal could be reached mobility was not considered a key element for transforming pedagogical practices. Based on that, we have elaborated, in 2012, a pilot workshop with the intention to encourage mobile devices' users (smartphones, tablets, netbooks) to see new meanings for online publishing based on the experience of making a cartography of a certain area. This experience has taken into consideration some of the cartographic methods mediated by digital technologies, such as mobility, blogs, digital geographical markers (geotags), and technology of digital reference markers (QRCode). A group of near twenty public school teachers from the State of RS has taken part of the experiment and the results allowed us to consider the possibility to extend and improve the experiment through a research project. Among the results from this project we highlight the change of meaning the teachers attributed to the digital-virtual, who described it as the possibility to "broaden" or "augment" knowledge about the places and objects surrounding us from the possibility to register and publish information on the web and mark them as QRCodes (Lopes and Valentini 2012). In this way the term Augmented School comes from the idea that current technological mobility and possibility allow school to be reconfigured as its boarders are reoriented and receive new meaning from the attentive acknowledgement about the territory they occupy.

> Within the system of nature, man distances himself from the possibility of fulfilling accomplishments with his own piece of land. [...] Right there, where I live, I often do not know where I am. My awareness depends on a multiform flow of information bypassing me or not reaching me, in a way they escape the current countless concrete possibilities of usage or action. [translated by the author.] (Santos 1998, 6)
>
> Thus,
>
> The mankind's means of life, and their surrounding, is not what for some decades geographers, sociologists and historians have coined as technical environment. The technical-scientific-informative environment is a geographical environment where the territory necessarily includes science, technology and information. […] the technical-scientific-informational environment is the new face of space and time. […] Groups, institutions, individuals live together but do not perform the same time. The territory is, in fact, a super position of engineering systems differently dated, and nowadays used in different time. The several roads, streets, public areas, are not equally run through by everyone. Each company's or person's rhythm is different. It would be more likely to use the expression temporality than time in here. [translated by the author.] (Santos 1998, 21)

Milton Santos, when shedding light on technique, space and time, have presented us in the 90s with important elements to be taken into consideration about the territory

we live in. Not knowing or not paying attention to the territories we occupy is a mark of the acceleration, and consequently, of the transformation of notion and feeling about the time and space. Such acceleration is usually attributed to technologies and to the way of generating movement they provide, usually lined by the logic globalized consumer markets. The same way the steam engine has generated new measurements regarding time, data microprocessors has been generating new measurements and accelerations. At schools the resistance on using technologies, for a long time and still today, is related to, among other aspects, this process of acceleration and consumer appeals.

Under the scope of our research, we understand that the ways of using technologies, mainly the digital ones, does not necessarily have to be associated to the logic of consume, nor to the acceleration of processes. On the contrary, what we have been proposing through cartography is the deceleration – due to the attentive recognition of differentiated attention regimes – the protagonism and the participation of people embedded in these digital inclusion and citizenship programs being developed in schools and communities. Our objective is basically to deal with the qualities in those processes. This way, besides the rules guiding the cartographic method of research, we understand that it would not be enough for the research being ourselves the ones to carry on the cartographies of those territories where PSP and PTP are developed. The intervention pole of this research is being conceived from the proposition that the subjects themselves (teachers, students and local communities) are capable of taking over this methodology. Besides that, let the digital devices received by them be available for the reconfiguration of their territories, citizenship and the promotion of the expected densification of local cultural practices, instead of mere technological densification – as in the rule of technological saturation that have ruled the discussions about the 1:1 model.

As a way to technological and methodological appropriation, the idea is to propose and discuss, through workshops with administrators and local school communities, the cartographic experience mediated by the available digital technologies – tablets, netbooks, geolocation, QRCodes, blogs, multimedia, social digital media, blended reality, etc. The same way the pilot workshop that inspired this project (Lopes & Valentini, 2012), it is also through workshops that we intend to create an esthetic and/or informative experience for the generation of senses about the place/people/public objects. This way, the experience has the intention to cause double appropriation – technological and symbolic – as the senses produced by the experience of tracing the surroundings is given based on digital media – the locative and mixed reality media, in this case.

In a second moment, after the recognition of territories and the sharing of what have been generated – through blogs and social media, for example – the idea is to propose the participants to carry out the recording of cultural spaces and groups identified within their territory in the Digital Map of Culture in RS. At the same time they mark the identified places on the collaborative digital map, through printed plates with QRCodes (Quick Response Codes[25]) mark their own territory and its physical and digital location. When somebody accesses a QRCode marking a certain spot on the territory, it gets closer to the other's temporality, the one who had been there at another time and who has generated information about oneself and the space around him (an old image, a verse, a fact, a song or noise, an explanation). We understand that the

[25] http://en.wikipedia.org/wiki/QR_code

movement of mapping can, at the same time, cause deceleration, broaden senses and attention towards the territory and, consequently, possibly reconfiguring those spaces.

5. Results

Along the text we have described our own process of tracing government policies regarding to digital inclusion and public security, trying to find the connection between their actions towards the promotion of a culture of peace in the territories marked by violence and criminality.

It was possible to identify that such policies bear in mind that, besides the actions addressed to public security, the densification of spaces for popular participation and citizenship, associated to the fostering of cultural practices and the enhancing of local economies are understood as ways to give new meanings to sociability in the most vulnerable territories. It was possible to perceive that, although having ongoing actions for digital inclusion the PSP does not express clearly what its contribution to address the violence issue would be. In the PTP, on the other hand, it was made evident that digital inclusion is directly related to the communication function of digital technologies in the sense of generating actions to foster protagonism and mediatic autonomy by teenagers living in those territories.

As a way to propose the convergence of PSP and PTP actions we present the cartographic method of research and intervention mediated by digital technologies capable of triggering attentive recognition of the territories from the educational and non educational communities that take part in those projects. Therefore we present our own theoretical, methodological and technical understanding in order to being able to develop, in a participatory way, the research with the theme "Augmented School".

The current technological possibilities (GPS, locative media, cloud computing, among others) allied to participatory methodology and epistemology allows the composition of a promising scenario for the field of ethnographic based researches.

In this sense, the cartography mediated by digital devices emerges as extremely rich methodological possibility as it implies the inclusion of social actors in the context of engagement with local issues and problems. Such engagement would be a necessary condition for the production of meaning through the shared and mediated use of digital technologies in the process of knowledge construction. We believe that this scenario can reconfigure both the research itself and the contract between researchers and subjects, as the action and participation become instances of authorship from which all speak and produce.

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Professional vision in scientific practice. The co-construction of meanings through the use of Skype

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Abstract. The paper intends to show, thanks to STS perspective, how ITC technologies contribute to the formation and sharing of scientific knowledge as it is being produced. Also the paper intends to investigate the process by which meanings are constructed in scientific practice through the use of web technologies. In particular, the use of Skype allows the sharing and communication of materials, texts and images, which are able to construct scientific knowledge. The contribution presents the case of Skype usage among researchers (molecular biologists and experts in nanotechnology) who, for the first time, observe and comment on the results of their own experiments.

Keywords. Professional vision, ICT, Knowledge, Professional practice, Learning.

1. Shaping scientific practice through the use of web technologies: theoretical framework, research aims, field and research issues

By observing an episode which is part of a more ample ethnographic research program dedicated to learning in scientific practice (Viteritti 2011; 2012; 2013), the paper intends to observe how ITC technologies contribute to the formation and sharing of scientific knowledge as it is being produced.

In fact, the paper intends to investigate the process by which meanings are constructed in scientific practice through the use of web technologies. In particular, the use of Skype allows the sharing and communication of materials, texts and images, which are able to construct scientific knowledge. Experiences mediated through the social world of digital technologies foster a wide participation that shapes more stable techno-scientific knowledge through time.

In the light of this premise, the paper aims to examine the following issues: sharing knowledge and visual knowledge in the interdisciplinary field; the social construction of knowledge and visual knowledge intended as situated learning; the social construction and sharing of knowledge through the digital world.

From a theoretical perspective, the contribution combines different perspectives: the ethno-methodological approach (Garfinkel, Lynch Livingston 1981), STS studies, with particular reference to professional vision and visualization (Goodwin 1994; Lynch and Woolgar 1990; Grasseni 2004; Perrotta 2012), virtual ethnography (Pink,

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2007; Dicks, Mason, Coffey, Atkinson 2005; Hine 2000) the framework of learning in practice (Lave e Wenger 1991; Higgs, Barnett, Billett, Hutchings, Trede 2012; Viteritti 2012) and laboratory studies (Latour and Woolgar 1979; Latour 1987).

From an empirical point of view, the contribution presents the case of Skype usage among researchers (molecular biologists and experts in nanotechnology) who, for the first time, observe and comment on the results of their own experiments. The study involves nanotechnologies able to transport cholesterol, passing through the blood-brain barrier and releasing the cholesterol after which it decomposes itself. The experimental practice is situated in a wider program regarding Huntington's disease, a neurodegenerative illness, which was studied in the laboratory where I conducted my ethnographic research (Viteritti 2012).

My aim is therefore to understand how the use of technologies such as Skype and email can foster learning and the elaboration of knowledge by allowing scientists from diverse interdisciplinary fields to work together and share their research issues and findings.

The paper combines various research issues:

- learning the visualization process of science through practice, in the form of graphs, images and texts, and the role that these visual representations have in the construction of scientific knowledge;
- the way in which knowledge (in the form of images, texts, data and representations) is produced, circulated and shared through web infrastructures;
- scientific cultural training in practice, starting with the sharing of visual knowledge through web resources;
- the gradual construction of scientific knowledge through the use of images, graphs and texts exchanged and discussed thanks to the new socio-digital world in which scientists work.

2. E-mail, Skype, images and the social construction of science: a little digital ethnography

To support these research issues, let me take you into the laboratory where I've spent much of my time in the last few years. This is the story of Marta, who is investigating the role played by cholesterol in Huntingdon's disease. Her hypothesis, which is confirmed by numerous experiments, is that in the presence of the disease a cholesterol deficit occurs at neural level. In the following account, Marta tries to analyze how cholesterol can be transported into patients' neurons by special nanoparticles (in this case, the experiments are conducted on animal models: mice), also thanks to colleagues in other research laboratories elsewhere in Italy and around the world, via Skype.

This is a small but emblematic ethnographical study which illustrates cooperation through the web and how this can contribute to the co-construction of scientific knowledge.

> One day in the laboratory, I was observing a young novice, Margherita, at work. As I watched her learning to carry out her first PCR procedure (an experimental technique used in molecular biology to multiply DNA), I was struck by a certain scene. One of the senior researchers involved in

> molecular biology, Marta, was seated in front of her computer wearing headphones, and seemed to be speaking to herself.

In reality, Marta was speaking with someone, and looking at images on her computer screen. Struck by some of the observations she was making, I watched and listened, and at a certain point she said:

> "Sorry, Giò, let me see properly. Where do I have to look now to see the cholesterol being released and the nanoparticles? Yes, yes, now I see them, yes, I can see them".

I cannot hear the other person's voice because Marta is wearing headphones, but I decide to stay there because it gives me the opportunity of understanding the role played by Skype in the exchange of information and the formation/sharing of knowledge.

I was observing a conversation between two researchers – a molecular biologist studying the role of cholesterol in Milan, and an expert in nanotechnology in Modena. The dialog via Skype linked two disciplinary fields with different requirements: transporting cholesterol to sick neurons and testing nanoparticles capable of doing so. The Skype conference I was observing allowed me to see how practical cooperation was established between the two researchers: Marta and Giò were testing the initial results of their work and were sharing hypotheses and interpretations. They were seeking points in common, were agreeing on how to analyze and verify their working hypotheses and were doing so through Skype, which from that moment would become a resource for a stable cooperation. At the end of the Skype conference, I got Marta to tell me the tale of how the nanoparticles met up with the cholesterol, and of the Skype-based collaboration between the laboratory in Milan with that in Modena and yet another in Los Angeles. Subsequently, Marta and I had various other conversations, and she supplied me with some photos which illustrate the story of this cooperation via Skype.

3. The story of four photos shared on Skype and the mutual construction of scientific knowledge

In the following photos shared via Skype, we shall see how the two researchers worked together at a distance. Over a period of time, Marta and her colleague Giò (in different cities) met up on Skype to observe photos of the experiments they were working on.

The first of these which Marta gave me is the black and white photo of nanoparticles. She told me that the first meeting on Skype allowed her *to recognize the nanoparticles which pass through the blood/brain barrier, thanks to Giò's expert eye*. Here is Marta's account of this event:

> "Sometimes Giò and I have met in Milan, or in Modena, but the rest of the time we see each other and talk on Skype, or exchange emails with photos and results: we've been doing this right from the start. This is the first photo he sent me via Skype: it was the first time I had seen nanoparticles and I had to learn how to see them. At the beginning, I found it hard to find the right conditions to be able to see them under the microscope, in the sense that they're very, very small, so Giò helped me

to see them. In that first conference on Skype he basically taught me how to see them" (interview with Marta).

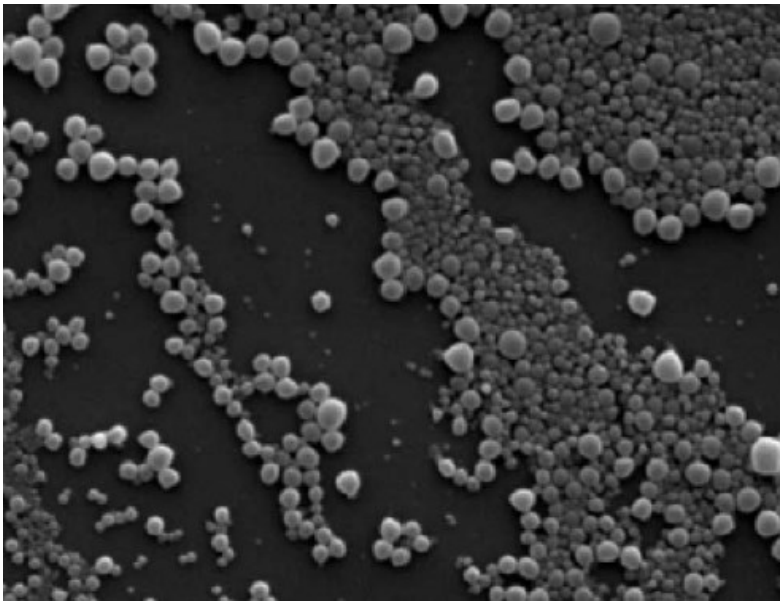

Figure 1. Nanoparticles able to pass through the blood-brain barrier.

In the second Skype conference, the one I found myself observing by chance that day in the laboratory, Marta was busy recognizing the nanoparticles which pass through the blood/brain barrier. She recalls that second conference and tells me how, via Skype, she learnt to recognize the nanoparticles with their red fluorescence, thanks to Giò's indications.

> "I remember saying to Giò: "Yes, I can see them! They're the ones with the red spots, I can see them, I understand, it's them."" (interview with Marta).

Marta tells me of the third Skype conference, in which they exchange a photo where the nanoparticles transporting cholesterol can be seen.

> "In that third Skype conference, we discussed a photo where you could see nanoparticles that were no longer red, but yellow: the yellow emerged from the fusion of the red nanoparticle signal and the green cholesterol one. In that conference, Giò and I learnt to recognize the results of our experiments, that is, how the fluorescent cholesterol is released. It was the first time I had seen it, and the first time Giò had seen it, so in that meeting at a distance we looked at the results together and agreed on what we were seeing".

The last photo supplied by Marta refers to an exchange of emails with a laboratory in Los Angeles, where experts in Huntingdon's disease carried out an experiment in electrophysiology using the results obtained by Marta and Giò. This experiment in Los Angeles aimed to find out whether the cholesterol, once released, produced an

enrichment of the synapses and neural function in the mouse's brain. The graph exchanged by the researchers would appear to confirm this hypothesis.

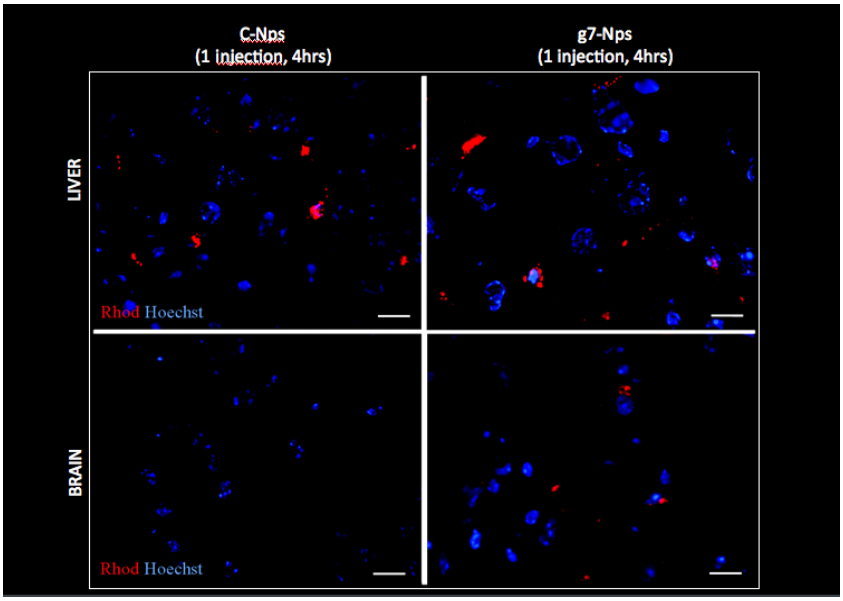

Figure 2. The nanoparticles are those indicated by the red peptide.

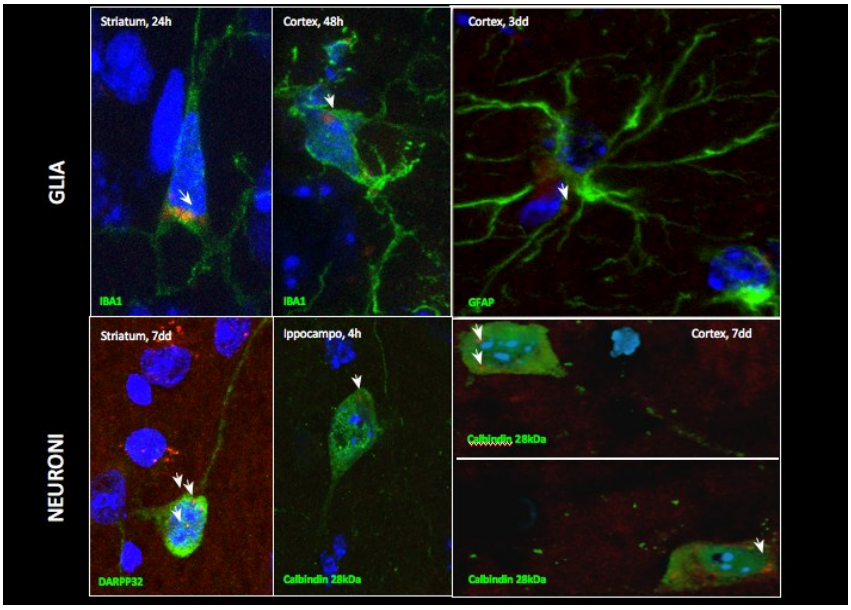

Figure 3. The nanoparticles degrade and release the cholesterol

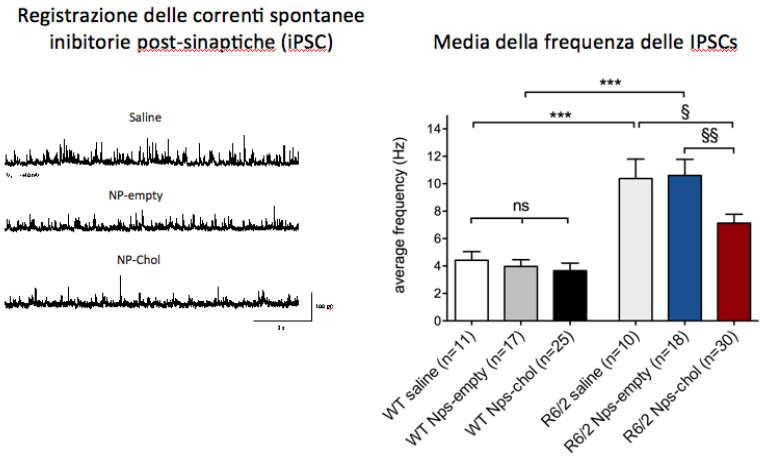

Figure 4. Electrophysiological test

The researchers involved in this little story of cooperation with the help of web resources are now moving on to drafting an article which will be submitted to an important scientific journal. It is being written jointly by Giò, Marta and the researchers in Los Angeles, and the text is taking shape via the exchange of emails and web conferences. A first draft of the paper is now ready, and Marta recently sent copies to the others. This text, the future article, is an artifact which was elaborated through an interdisciplinary method seeking to unite the forces of all the elements in the process: photos, graphs, Skype, emails, and the researchers who worked together.

This little episode explains the gradual construction in action of scientific knowledge. In this case, it happened through the production and sharing of results in the form of images shared via the web. The story speaks of the process of the mutual construction of knowledge sustained by web resources, intended as devices for sharing, which become a second nature. The web becomes an allied actor in the co-construction of knowledge. The researchers spend much of their time in front of their computers, exchanging files, images, temporary results, drafts of papers, conference calls, etc. The socio-digital world favors the assemblage of knowledge among science professionals and the web becomes part of the social space of the laboratory. Through the web, scientific knowledge seeks out verification, partners and allies. The web thus becomes the place where still-vulnerable scientific knowledge searches for stability.

4. Doing science using web resources (Skype and email)

The process of doing science through the web, which thus becomes a naturalized social space, requires visual skill, capacity for learning to see and recognize images and develop "skilled visions" situated in the various communities of practice (Grasseni 2004, 2007). The process of acquiring visual skills shapes the competency of professional vision when the images are not yet stable and are still evolving. Through the web (Skype, in this case) the images which are exchanged represent the seeds of knowledge which will become more stable and formalized in the elaboration of the scientific article. The scientific knowledge shared and interpreted in the form of

images which are still uncertain, incremental and evolving and the web vehicle allows the incisive circulation of images in search of stability and convergence of significance in the developmental stages of the various viewpoints.

Through Skype, researchers shape and share their hypotheses, creating interdisciplinary allies. The collaboration of researchers and Skype make networking possible and the interpretation of images, together with the meanings which link them, evolve from being opaque and uncertain to becoming clear and shared. The images exchanged via the web are not neutral, but strongly depend on the relationships and social mediation that construct them. They then become naturalized in practice and are transformed into real and more stable scientific objects. The communication resources of the web become the social and material space for sharing knowledge. They speed up procedures, reduce ambiguities and uncertainties and permit the carrying out of complex tasks at a distance.

The web becomes a learning space for the social actors and all the human and non-human elements involved – the web, photos, images, debates, researchers, cholesterol, nanotechnologies – can associate and seek alignment.

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What role do social media play in educational experiences of access to higher education students in England?

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Abstract. It is argued that digital media have transformed informal learning practices (Bull et al. 2008; 2009; Selwyn 2009), including peer and group learning, although there is evidence that amongst traditional university cohorts, sites such as Facebook are seen more as 'social glue' than as sites of learning (Madge et al, 2009). This paper, reporting on a study which is work-in-progress, investigates the importance of social media sites, such as Facebook, Twitter and blogs, for students studying on Access to Higher Education courses in England. Its goal is to better understand the increasingly complex and relatively under-researched 'mediascape' which defines contemporary education (Orgad 2007). Access students study to gain formal qualifications to be able to apply to study at university; they construct their identities by contrasting their educational objectives (i.e. increasing employability) and character traits (i.e. maturity) with those of' traditional' university students, whom they perceive as more immature and keen to socialise. With this self-ascribed distinctiveness and goal-orientedness in mind, we trace the usability of social media for educational purposes for Access students. In particular, we look at the role social media may play in engagement in out- of-class learning, and we examine whether they encourage students to be reflexive about their learning experiences (Archer, 2007). We also trace the 'boundary crossing' and identity-forming cultural practices (Giddens, 1991; Lave and Wenger, 1991; Wenger, 1998; Holliday, 1999) as students progressed through their Access course towards its completion and applying to university. Data used in the paper originates from varied social media sites, including Facebook pages, Twitter and blogs to which Access students contribute. It has been collected with the help of Internet searches and through observation of online discussions which we joined thanks to contacts in Access student cohorts who were interviewed for a different study. It was our intention to collect online-based data that reflected locally situated, everyday practices and musings of participants (Hine 2000). The data was then analysed using thematic analysis, identifying emerging themes and constructs (Mason 2002). The digital ethnographic approach that we have adopted in this paper offers distinct advantages in studying Access students' mediated experiences, as it helps to throw light on multimodal, localised mediascapes in which they live and study (Kozinets 2010; Busher and James, 2013); it also offers insights into informal learning practices of Access students

Keywords. Social Media, Higher Education, Engagement, Learning

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1. Introduction & Research question

We have become interested in investigating the potential of social media for Access students in the face of conflicting arguments about the value and potential of sites such as Facebook, Twitter, and discussion forums. While some authors argue that social media may be useful learning tools (i.e. Bull et al 2008; Greenhow and Robelia; Selwyn 2009), others contend that they are more often than not just 'social glue', i.e. a device useful for developing social life at university rather than deep learning (Madge et al 2009). This debate notwithstanding, we have noted that research investigating usefulness of social media is based on 'traditional cohort' samples, which are much more homogenous in terms of age than our sample of Access students. As we are not aware of research investigating Access students' use of social networks, we have set out to conduct a small study with such focus which is an offshoot of a larger research project that looks at experiences of Access students in general.
What needs to be clarified at this point is the very special character of the Access course and its students. The Access to Higher Education (HE) Diploma is a qualification which prepares students for study at university. It is designed for people who would like to study in HE but who left school without the usual qualifications, such as A levels, There are over 1,200 different courses leading to the Access to HE Diploma (Art; Business Studies; Nursing; Science; Social Sciences) and courses are available in most further education colleges in England and Wales. There were over 45,000 Access students in 2010-11. 72% students were women, and 28% were men; this proportion is skewed towards women much more than in the case of 'traditional' HE students where 56% were women and 44% were men in 2011-12 (HESA2013). The two largest age groups were 20-24 (35%) and 25-29 (19.5%), with 30 to 50 and above comprising further 32% (QAA 2013). It is clear then that the Access cohort is much more 'feminised' and older than the traditional one. The gender skew may be explained by the fact that by far the most popular Access pathways are those allied to medicine (nursing, midwifery) leading into professions are traditionally women-dominated.

2. Theoretical Framework

In this study we draw from several conceptual framework prominent within education and e-learning more specifically. Some aspects of the communities of practice theory (Lave and Wenger 1991) have helped us anchor the study epistemologically. In particular, we take up the following notions: that all learning is situated and can't be separated from its participants or the conditions in which it's taking place; that learning is based on collaboration and shared meanings, not learning objectives; that binaries, such as teacher/learner, formal/informal learning, theoretical/applied knowledge are not helpful in unpicking the intricacies of the process of learning. This theory has been used in the study of online communities of learners (i.e. Gannon-Leary and Fontainha 2007) as it is compatible with the affordances of modern technology (Conole and Dyke 2004). Furthermore, we have been thinking about our data using Meyer and Land's (Meyer and Land 2003, 2005) notions of threshold concepts and Turner's concept of liminality (Turner 1969). A threshold concept is 'a conceptual building block that progresses the understanding of a subject', while a liminal space is a space of transition, waiting, uncertainty.

These notions rooted in educational theory link up with some branches of theory emergent in the field of digital, or virtual, ethnography. As Hine (Hine 2008) notes, one of the latest challenges in this approach is investigating social realities inherent in both online and offline worlds; perhaps even erasing this differentiation in order to understand the complex processes underpinning the entirety of human activity. In other words, it is pressing to 'develop forms of ethnography that take seriously the social reality of online settings, whilst also exploring their embedding within everyday life (Hine 2008:258).

Several qualities of communities of practice and liminal spaces as described above emerge also as affordances (potential) of ICTs in education as conceptualised by Conole and Dyke (Conole and Dyke 2004). These include communication and collaboration that lead to new forms of dialogue; reflection and criticality; multimodality and non-linearity; finally, risk, fragility, and uncertainty. This combination of different concepts is helpful as it has helped explain patterns that emerged in the collected data.

3. Methodology

Our data for this study is mixed in character so as to reflect Hine's concern with unhelpfulness of the online/offline binary in ethnographic research (2008). It is being constantly generated, therefore is growing in volume. It consists of

a) **Non- reactive data.** Facebook posts/conversations on 3 student-initiated Facebook groups run over the course of last academic year; about 30 posts on a student-oriented discussion forum; a digital diary kept for a year on the same discussion forum, and about 100 Tweets containing the word 'Access'. The data represents a mixture in terms of levels of privacy. Whilst the Facebook groups (which we accessed upon request to the group moderators) were closed and therefore private, the discussions, diary and Tweets were publicly accessible. Following the AoIR guidelines (2004) we contended to ask Facebook contributors for informed consent as they had reasonable expectations of privacy; we treated the other communications as archives and did not ask consent in relation to publishing quotes; however, we kept all names and identifying information anonymous so as to keep the data as confidential as possible. Aware of a volatile debate related to ethical challenges of researching online environments, we considered different solutions whilst settling on one that we felt was fair and practical (Kozinets, 2011).
b) **Reactive data.** Data generated through focus groups at 6 colleges; N=60 students, 48 female and 12 male. Ages ranged from 19 to 45, with majority aged 24-29. Informed consent was obtained and data was anonymised. Focus groups were run in 3 rounds throughout the year. Students interviewed for the main, central project almost unanimously talked about their lack of self-confidence, in both educational and social senses, at the beginning of the course. It may be understandable since they returned to education after a considerable break from formal schooling, more often than not with bad experiences and memories of their earlier endeavours. Many students, especially women, talked about a loss of identities other than those of mothers or wives. Also, many students struggled with IT classes as previously they did

> not have the need to use a computer; several joked that their kids were much more advanced in technology use than them. Any earlier experiences of Facebook or other social networks were purely recreational.

4. Emerging themes

The analysis of the data for this paper is work in progress and the analytic framework is still fluid, however certain patterns related to each type of communication begin to emerge.

Once enrolled, students discovered that Facebook allowed them to *communicate outside of class*, crucially at important points during the course, for example when assignments were due and people were 'stuck' or did not understand something. As one of the students explained in a focus group: 'We made a Facebook group so we can all kind of ask. If anyone gets stuck on anything, we can share what we know.' However, at this point some students get excluded if they do not have a profile, as another one noted: 'the down side is people that are not on the social network. I'm not on the social network so obviously I don't get to see what is put on there.' *The sense of familiarity* on student Facebook groups is likely to have emerged due to the fact that students knew each other in class. Assignment-related questions are interspersed with study-related jokes and complaints about the workload. These discussions veer off towards what Hine (Hine 2008) called 'the everyday': children, laundry, cooking. In addition, students used the discussions to release the tension and stress related to the assignments by using informal language, for example: 'I'm screwed' or 'it's bollocks'.

However, *the focus on the assignments* is strong as a majority of posts are about that, and, importantly, they receive the strongest response. A request for help with a learning task induced, on average, a thread of 7 responses (not each of these was written by a different person). Such collaboration suggests the emergence of a budding community of practice (Lave and Wenger, 1991). Facebook discussions also allowed the students to establish hierarchies of importance of their different learning tasks. For example, one of the students asked whether anybody had notes from a class debate; six different people advised her to 'make up the notes' on other students' advice. Interestingly whilst the Facebook discussions focused on very specific problems often shared by the whole group, the interactive diary (kept by one student but containing responses from others) constructed many *strategies of 'learning to learn'* on Access (which is a very intensive course as material usually delivered over 2 years is crammed into 1 year here). For example, when in the comments section another student asks the author for help ('my brain has gone to sleep…'), he advises her to

> just try to keep organised and keep on top of all of your work. The last thing you want to happen is for work to start piling up (especially this early on); If you're struggling with anything in lectures then make sure you ASK QUESTIONS! Don't just sit there in the back of the room with a confused look on your face. The students that ask questions are the students that get high marks. Answering your questions is what your teachers are getting paid to do!

This advice indicates a strong 'independent learner' attitude; the author is sharing with others his strategy that is based on good work management and initiative in knowledge-seeking as well as a specific expectation in relation to the tutors'

responsibilities. In this example, the communication/collaborative affordance of ICT is clear as two individuals are able to engage in a conversation about specific study skills necessary to complete the Access course.

It appears that these online discussions are especially appreciated by students who do not have a lot of opportunity to meet up outside classes due to distance or family duties. As one of the focus group participants said: 'We've been talking over Facebook about our first assignment because like we're all in different parts of [city name]'. Some contributors feel unnerved when they find out on Facebook that their assignments or essays are different to those of other students: 'if you put something on Facebook going, 'Oh I've done it this way', and then somebody goes, 'Oh I haven't done it that way'. Then you start panicking.' This description of discomfort related to (painful) acquisition of new knowledge echoes the characterisation of liminal spaces as fragile and uncertain (Meyer and Land 2003)

Whilst the *space to 'panic'* and release tension seems important to students ('I like that we're all comfortable enough to kind of freak out and know that there's going to be someone there to help.) the attitude to learning remains engaged and active. This is in stark contrast to Selwyn's sample of university undergraduate students where promotion of oneself as incompetent and/or disengaged was prominent (Selwyn 2009).

Whilst each Facebook group environment was a close-knit one and the students knew each other personally, the interactive diary prompted a discussion in which Access students from different colleges across the country participated. This variety of perspectives caused discussions to include other aspects of the course, in particular exchanges of *critiques of some organisational aspects of different Access courses*, for example mix-ups with timetabling and classrooms, as well as incorrect information from the tutors regarding organisational procedures regarding the course and the university application process. One contributor wrote: 'The amount of information and misinformation i've heard over the past few weeks even from course tutors has been unbelievable.' Therefore, a publicly available blog-shaped diary allows students to exchange their experiences, praise, and critiques with each other – it becomes a space to build an informed opinion of one's own Access course in comparison with others.

5. Concluding remarks

Obviously, the value of ICTs in education cannot be reduced to Facebook; there are a wealth of different digital media and social networks facilitating learning. Whilst we would shy away from simple verdicts regarding the value of this or any other digital tools for *all* adult learners, the tentative analysis of our data suggests that many students find it useful as it complements and extends their learning beyond the classroom and allows reflection not only on study matters but the way the Access course is delivered (Archer 2007). The unusual/non-tradtional characteristics of our sample may contribute to that; a large proportion of Access students are either women with childcare/family responsibilities or people living in rural areas, for whom collaborative face-to-face study is impossible.

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E-Learning technology and digital ethnography for language learning in the modern classroom

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Abstract. A pilot course was developed for foreign language students with the aim to enhance their ability to practice their listening, speaking and writing skills outside of regular classroom settings. The course engages students in cooperative learning and involves online learning pedagogies. Furthermore, students as well as faculty apply ethnographic methods to observe and learn from each other. This method affords the teacher the opportunity to access the learning progress of the group as well as the individual student. Methodologies are reviewed and logistical obstacles encountered are acknowledged.

Keywords. Digital ethnography foreign language learning

1. Introduction

1.1. Challenges to creating an unorthodox curriculum

Many constraints are placed on foreign language departments due to a lack of resources. In recent years, course offerings and hours have been decreased and fewer new faculty members have been hired to teach courses at the intermediate and higher levels. As a result, instructors are attempting to develop new pedagogies and employ teaching tools in order to maintain student progress in spite of these impediments to teaching and learning. The research discussed in this paper concentrates on such an attempt, namely a pilot project in a German classroom setting at a university in Philadelphia. This project capitalizes on the unique opportunities afforded by e-learning technologies and ethnography in the creation of meaningful language learning.

Given the heavy reliance on e-learning technologies in the structure of this course, important insights into pedagogical best practices for foreign language and online learning are emerging. Methodologically competent guidance from an instructor and cooperative learning can enable students to target specific educational goals outside of the classroom and to take advantage of technology in order to maximize their foreign language production.

Prior to the implementation of this project, a review of students' course evaluations indicated a strong dissatisfaction with the limited time students had to hone their language skills and to gain an in-depth understanding of the culture under study. Consequently, careful attention was given to ensuring student participation and

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collaboration as there was a lack of classroom face-to-face interaction while employing e-learning technologies as a means of learning and practicing. The question arose as to what was the most effective method to guarantee interactive engagement in the foreign language learning process when discussions were not steered directly by the instructor. How could students be involved in cooperative learning outside of the classroom? Online ethnography and peer review were implemented as cooperative-learning techniques to enhance and to assess performance.

1.2. Course structure

For the last nine months, students at the intermediate level have been given the task to record themselves speaking in the target language for one hour per week via smart phone or computer. Then the students have had to send the recording to a peer who, in turn, has had to transcribe the words to which they have listened. Finally, students have reported on the listening exercise in the classroom and have posted the transcript on an online course content page.

These exercises have given students opportunities to practice their listening skills, to reinforce their writing and structural skills, and to enhance their speaking skills. By employing these e-learning technologies and redefining the classroom in an elastic context, this curriculum has better served students who have been given insufficient time in class to improve their language skills.

In this particular research, the role of the subjects, namely the German students, has been that of knowledge co-producers. The students have provided information by speaking, they have analyzed the data by transcribing the listening task, and at the same time have written reports on the given exercise. In addition, the use of e-technology has afforded the instructor an opportunity to enhance, observe and assess language production for the individual student as well as the group. Successes and failures with this course task are discussed in the hope that best practices can be established to inform future development of similar curricula in the academic community.

Empirically-based pedagogical tools must support academic enthusiasm for language learning if students are to realize their potential for foreign language competence. Empowering students as co-producers of knowledge in this context is essential for students to become confident and efficient speakers of foreign languages, further encouraging global citizenship as they cross cultural boundaries through language learning.

2. Methods of teaching and learning

Research suggests that cooperative learning has positive effects on foreign language learners. It can positively increase self-esteem, long-term retention or depth of course material (Johnson & Johnson 1991; Slavin 1995; Kagan 1999). Students operating in a cooperative learning activity attain higher achievement levels than those who function within competitive and individualistic learning structures (Zhang 2010). Cooperative learning occurs when small groups collaborate in order maximize their learning as well as that of their group members (D.W. Johnson, Johnson and Smith 1991a). The following five elements are crucial for increasing the successful outcome of the cooperative learning endeavor: (a) positive interdependence, (b) face-to-face "promotive" interaction, (c) individual accountability, (d) social skills, and (e) group

processing. Based upon this theory, the restructuring of German 201 language course aimed to incorporate all five elements into the learning process with the aid of e-learning technology and the online ethnographic method.

The first element, *positive interdependence,* requires that all members of the group gain the understanding that their work is essential for the success of the group and, in turn, the group's success impacts the individual student's progress. Hence, positive interdependence makes the sharing of resources, the provision of mutual support and encouragement, and the acknowledgement of success necessary (D.W. Johnson et al., 1991a). According to D.W. Johnson et al. (D.W. Johnson et al.1991a), positive interdependence can be achieved in multiple ways, i.e. through the promotion of mutual goals, the establishment of joint rewards and the assignment of complementary roles.

At the beginning of the German 201 course, the instructor clearly outlined the goal of the exercise, namely the improvement of the language skills of the individual as well as the group. Students were assigned new partners each week. By rotating partners, it was hoped to create not only small group but also larger group interdependence, thereby positively enforcing the relationship of the learning community as a whole. The students were given the task to send their partner a recorded spoken assignment, who in turn was to listen and transcribe it. This assignment created strong interdependence between students, as the pair's homework could not be delivered if one of the students failed to complete his or her part of the homework assignment. Consequently, this created a strong incentive for students to collaborate as it resulted in joint production and reward in the form of a shared grade.

A multitude of studies (Johnson Johnson, Stanne and Garibaldi 1990; Mesch D.W. Johnson & Johnson, 1988; Mesch, Lew, D.W. Johnson & Johnson, 1986) have indicated that positive interdependence provides the impetus for some of the other elements and can be effective for increasing achievement. The second element of cooperative learning, *face-to-face promotive interaction*, takes place when individuals encourage and facilitate each other's actions in order to achieve group goals (Onwuegbuzie, 2001). In the case of German 201, students pursued a common goal in a collaborative fashion, by posting transcripts and other documents in an online learning management system. Students provided feedback on the assignments their peers posted, including reactions to written documentation and to an in-class oral presentation. The goal of providing this open forum for critique was to improve future performances by encouraging students to evaluate their language ability critically. In addition, the third element, *individual accountability,* was maintained continuously as the performance of each individual student relied on that of another student, and as each student was evaluated continuously either through the ethnographic work or class performance.

The fourth element of cooperative learning is *social skills*, which asks students to demonstrate the appropriate use of small group and interpersonal skills. In order to promote social skills, students must gain mutual understanding, establish trust, communicate effectively and be able to solve conflicts. This element was much more difficult to integrate as many of the students did not know each other and wondered as to whether they could rely on their group partners to be accountable and to do their work.

Hence, in the beginning of German 201, it was the role of the instructor to decide which students had the necessary skills to work effectively, to teach them the appropriate use of the skills and to reward them accordingly. As the group moved through German 201, 202 and 203, group familiarity emerged and the instructor's

active role to promote and ensure collaboration diminished. However, this outcome was also strongly influenced by encouraging interaction through online ethnography, which not only enforced strong collaboration but evoked familiarity, arousing interest in each other's lives and ultimately causing bonding. This development resulted in extracurricular activities such as the founding of a German club which, in turn, reinforced positive learning outcomes outside the context of the classroom.

The last element of the five-element cooperative learning theory focuses on *group processing* and reflection in order to discuss the effectiveness of a given action, and to decide whether to keep, modify or discard the learning activity. As D.W. Johnson (Johnson 1991a) recommends, instructors should systematically monitor groups to evaluate group processing. This was done in two ways in German 201. First, class discussions were initiated and students gave positive feedback on the task. They stated that the assignment exposed them to more culture, challenged their listening skills and encouraged them to increase their written production in the target language. Students also commented positively on getting to know their classmates better. Secondly, at the end of each term students were asked for a written evaluation on the newly integrated assignment, to inform practice in future offerings of the course.

3. Outcomes

The cooperative learning approach in used in this course was successful in terms of both student performance and student feedback provided for the course evaluation at the end of the semester. In particular, one student highlighted the benefits of creative assignments improving the ability to express opinions confidently:

> I enjoyed the media assignments and thought they were effective in exposing us further to German culture and etiquette. They were challenging, and they motivated me to listen closely in order to understand the main ideas and conversations in each film. The speaking reports allowed for creativity, which made them fun and engaging. They were a nice contrast to the media assignments, as I was able to spend some time listening to native German speakers and some time listening to classmates.
> I think my listening skills improved greatly from both assignments. Watching German media allowed me to become accustomed to specific pronunciations and colloquial speech. Although not as challenging as listening to native speakers, the speaking reports were an excellent supplement in developing my listening skills. Both assignments helped me to learn more vocabulary and hone my writing and grammar skills. The speaking reports also provided good practice with oral skills, and by the end of the course, I truly felt more comfortable with speaking.
> For the media assignments, it would be fun to share in class a short summary of our favorite videos so that classmates can watch them if they are interested. For the speaking reports, I liked the idea of having improvised conversations with our classmates. Perhaps, after listening to the recording, we could meet with our partners in class and ask questions/converse about the topic of the recording.

The student's comments clearly show an appreciation for the assignment, as it not only improved her language abilities, but also exposed her to more cultural learning. The instructor benefitted from the comments and implemented the suggested changes. Another student expressed the value of learning culture through a different medium and emphasized that the exercise boosted her self-confidence while speaking German:

> I thoroughly enjoyed the media-assignment and speaking reports. The engaging aspect of the assignments, and the peer sharing to hold me accountable, made for very interesting work. I feel as though I put forth more effort with the speaking reports, knowing that one of my classmates would need to understand and be entertained by it. The media assignments allowed me to view German culture from a different vantage, rather than only gleaning an understanding by reading a textbook. I watched many different kinds of television shows from cabarets to travel videos to "reality tv."
>
> I developed more confidence with speaking, especially since I was able to play them back to hear myself. Listening to myself and to my peer's report showed me what could be said more clearly, showed me common pronunciation errors, and showed me that I was doing better than I thought. With the media assignments my comprehension absolutely soared. With 9 months of weekly or bi-weekly television, I found myself comprehending situations I would have never imagined. I also found myself better understanding music I had been listening to for months, and was very excited to be able to listen to news broadcasts with confidence.

Another student also commented on the improvement of her skills but also on the fact that it helped to build her self-confidence. Her performance anxiety decreased because she no longer had an immediate audience, which would evaluate her skills:

> My language skills improved greatly in speaking and pronunciation. When recording myself to speak for a classmate, it was important that I enunciated properly and could speak to them in a way they could understand. In class, it's easier to hide and not speak as much, but in this assignment you were forced to spend time speaking to your partner.

Foreign language speaking anxiety is a common phenomenon, although it is not always easy to identify as non-participation can also be attributed to a lack of motivation. Components of foreign language anxiety are identified as communication apprehension, fear of negative evaluation and test anxiety (Horwitz, Horwitz and Cope, 1986). By creating a private learning and performance environment, some of this anxiety has been removed and students take more time in honing their skills. They cannot immediately gauge the reactions of their instructor or peers, and do not have to fear negative evaluation. Most importantly, this student focused effort on improving language skills, rather than spending energy on evading evaluation in a traditional classroom context.

4. Conclusion

4.1. Ethnography as a means of assessment

In a conventional classroom setting, the instructor can "collect data" or assess his or her students through direct observation, interaction and testing. Moving teaching and learning into cyberspace complemented the regular methods of assessment and aided in the critical analysis of student learning difficulties and progress. With the use of e-technology, namely smartphone recordings and courseware postings, the instructor was able to listen more closely to students' oral production and give more attention to individual student language competencies. An electronic record afforded the teacher the possibility to repetitiously listen to the oral production, to document the mistakes and to gain a better and more nuanced understanding of the challenges each individual faced in the learning process.

Digital ethnography gives the opportunity to enhance the teaching of language in the context of culture. At most universities, there is a compartmentalized notion of the target language as separate from its speakers. Robinson-Stuart and Nocon (Robinson-Stuart and Nocon 2011) express this problem eloquently:

> The tendency of students to separate language from the culture of the people who use it, and by extension from the people, is less surprising when viewed in the context of the history of language pedagogy, which has for the last 50 years focused on the four language skills, that is reading, writing, listening and speaking. When culture was addressed, it was a body of facts that frequently dealt with food, festivals, buildings, and other cultural institutions (p. 437).

Although restructuring a curriculum, or even a single course, is never a trivial exercise, any measures that can both improve student learning and student engagement should be seriously considered.

The role of new technologies and pedagogies alike must be scrutinized before, during, and after adoption. As Bahrani (Bahrani 2011) asserts, "any methods to be used for language testing with the employment of any technologies including mobile phones should be authentic, valid, and reliable" (p. 298). The use of technology in this course enabled the instructor to observe the students in their natural habitat as students often spoke about mundane topics such as their evening routines, their weekend activities or anything unusual, which they experienced outside of college life. These narratives contained much information and presented the instructor with knowledge not just concerning language ability but also concerning family, daily routines habits and personal interests. Furthermore, some of the oral narratives focused on cultural topics and the choices, again, were an indicator of the student's cultural understanding and interests. These observations support Bahrani's further assertion that learning activities "should also be based on the students' interest. By using the technology, teachers can make a connection between language assessment and real world communication" (p. 298).

While the instructor was no longer a participant observer in the learning process, she was able to collect data through e-learning technology methods and assess student progress. Furthermore, it informed her teaching as it allowed her to design the curriculum around student interest, which in turn seemed to create stronger enthusiasm for the topics under discussion and better student participation. By using e-learning

technology to perform ethnography, the instructor became more familiar with her students' abilities and lives, which greatly improved group interdependence.

Although there was no immediate contact as in conventional classroom environments, this assignment seemed to break down barriers which are often erected in face-to-face foreign language classes as students are intimidated by their instructor's and peers' observations of their abilities. This indirect interaction between peers and with the instructor evoked a sense of comfort and allowed the establishment of familiarity and trust. Furthermore, the indirect transmission of student output and feedback was complemented by the more direct communication required as part of ethnographic interviews:

> The process of conducting person-to-person interviews further diminishes distance in a very real and human way. The metacultural third space becomes a material space of interpersonal, intercultural contact that informs learners' knowledge of cultural boundaries in a process of joint production of meaning and acquisition of living culture (Robinson-Stuart & Nocon, p. 437).

The shared learning environment of the online course discussions helped to create a learning community that was both supportive and effective for students. By exploring the use of digital ethnography, students were able to incorporate their own identities in a meaningful and effective manner that contributed to their language learning.

4.2. Recommendations for future action and research

While feedback from students and the instructor has been extremely positive, it will take a longer application of this method and more data collection to determine whether interdependent peer-learning and the use of e-learning technology has a positive effect on student progress in the foreign language classroom. The results of this research were taken from a small sample of students and hence, the results cannot be generalized at this point. In addition, there are also several logistical and pedagogical aspects of the integration of the learning method that deserve closer attention. These challenges include organizing participation, improving students' willingness to engage with peers, and general familiarity with online learning technologies. Much research remains to be done on best practices for curriculum design in this area.

Whereas this first cohort of students has been very responsive and engaged over the course of three terms, future students might not be as committed to performing well on this particular assignment. The implementation of this assignment demands that students have to rely heavily on their partners to complete the task effectively. If teamwork does not function, the pedagogical goals of the task cannot be achieved in their entirety. Due to the university's quarter system, student bodies change constantly. This fact might negatively impact the cooperative learning process as social skills such as mutual knowledge and trust need to be developed over time. In addition, not all students have smartphones with which they can easily record themselves, and some students do not possess the technological know-how to do so, even if they have ready access to the hardware. The same can be said for faculty members, who might be not be as familiar with e-learning technology as the instructor who taught the previous courses.

It is anticipated that some instructors might balk at integrating this new assignment, as it is time-consuming to listen to the weekly recordings, documenting and assessing the performance of each student. If changes to the curriculum will be made for

subsequent runs of the course, the department needs to be truly committed to allocating resources for the purchase of e-learning technology and training faculty as how to employ them effectively.

However, in spite of all these challenges, the methods of e-technology and digital ethnography have the potential to play an important role in the acquisition of language as well as intercultural skills. Garrett (Garrett 1991) viewed language as a dynamic interactive system for conveying meaning and language learning as the acquisition of the ability to construct communicative meaning in a new system. The implication, according to Garrett, is that because "so complex an ability can hardly be 'taught,' our job is to create such an environment—in class or in our materials—in which students can work on acquiring that ability" (p. 92). If conventional learning environments can no longer provide sufficient learning time or evoke motivation among students, it should be the goal of instructors to make use new methods to create an effective, integrative, and supportive atmosphere for language learners.

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Going on- and offline: Following the course in the light of e-pedagogical concepts

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Abstract. This paper is about an ongoing research focus on the developing of e-pedagogical strategies related to profession-oriented learning and to organizational culture. In terms of methodology, the challenge is to confront classic ethnography with the modern learning context characterized by the use of welfare technologies, IT tools and social media. In terms of empirical studies, the challenge is to follow a full-scale online programme in nursing education, but also to follow the course of a shift between online- and offline activities. In light of the e-pedagogical concepts, the paper will reflect research strategies and analyse the tendencies and consequences for the digital classroom, teacher planning and the student's learning practice.

Keywords. ethnography, online learning, e-pedagogy, IT-based development

1. Background

The former comprehensive fieldwork in the upper secondary "IT schools" covered the practical tendencies at different organizational levels. Being in the area of ICT and learning, the classic ethnographic approaches were challenged not only by the new IT tools, but also by references to teacher professionalization and youth culture. Consequently, the challenge for this project was to elaborate new concepts of digital literacy and to cope with both formal- and non-formal learning situations. Related to these challenges, the school case analysis showed the practical process of implementation of the IT-based strategies, in addition to how constructions of blended learning are a matter of creating a context-sensitive mix of on- and offline situations (Borgnakke 2012).

At the same time, students create their own strategies as a new common space for interaction and communication creating what in the analysis is called the third learning space (Borgnakke 2012:165).

Referring to IT-based learning spaces, we recognize there are challenges to be met by both the field of practice and by the ethnographic research methodology. As shown in Borgnakke (Borgnakke 2013b), the challenge relates to organizational level and its activities and processes. As an example, the leader team at the case school regarded the IT-based strategies and systems such as the LMS system as their management platform, which were further challenged by the use of shifting on- and offline organizational

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activities. The faculty and teacher teams regarded the same LMS system as a matter of professional pedagogical acting challenged by the practical processes of planning, teaching and evaluation (Borgnakke 2011, 2012)

Coping with a diverse range of challenges and shifting online/offline situations is therefore in itself a challenge. The point to be stressed in this article is that in terms of the methodology, you meet the challenges by following the field.

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2. Following the field

"Following the field" means that the methodology recalls research strategies for multi-site and multi-level ethnography (Marcus 1995, Borgnakke 2010), while rethinking basic principles described as ecological validity (Hammersley & Atkinson 1983; Borgnakke 1996). In the programmatic article, *Ethnography: Problems and prospects*, Martin Hammersley related the need for rethinking the study of the new online cultures (Hammersley 2006). In the article, *Ethnography on IT-based learning contexts - A matter of blended methodology and blended learning*, Borgnakke confirmed the need for rethinking the classic approaches to match studies in online cultures, but criticized that Hammersley paid too little attention to the fact that most of the new settings are not exclusively online, but rather a blended mix of online- and offline situations (Borgnakke, 2013b). In a broader perspective, the situation is better described in terms of a medialized everyday culture and medialized learning culture, as stressed by media researcher Stig Hjarvard (Hjarvard 2008). Related to this concept, both the IT-based learning context in general and the online education exemplified further in the paper will be described as an ongoing series of online- and offline activities.

In summarizing the methodological principle about ecological validity, the data and document collection can be regarded as an "authentic mix" mirroring IT-based strategies by coming directly from the process of implementation from the different school levels and parties. Furthermore, the collection mirrors how all components, voices and contradictions are already embedded in the practical pattern and in the digital process. Basically, this means that the ethnographic framework must be regarded as "a mix of methods and voices" blended to the same degree as the field of practice.

This statement, "blended to the same degree as the field of practice", is a conclusion given in Borgnakke (Borgnakke 2013b) in relation to ethnographic work coping with both the political and institutional macro-, meso- and micro levels. To a high degree, "the authentic mix" having ecological validity will be a collection

referring to policy documents, laws, programmes and strategies followed by a material of curriculum and plans for the process of teaching. At the same time, the point is that these materials all are included in: 1) organizational websites, the intranet and the LMS system (e.g. Lectio, Fronter and Moodle), and in 2) the spectrum of used devices. The point is also that the materials and used devices mirror what is officially allowed and recommended in a learning context and what is not. For example, the use of Facebook was not allowed for a period of time during school hours in one of the case schools.

Based on the principle of "following the field of practice", there are therefore important data collections referring to the process and overview of the official agenda, as well as to small details in non-official agendas in IT-based learning.

In relation to current research, "following the field" means that we are following the starting process in a new online education in healthcare. In the starting phase, we had a focus on how the teacher teams conceptualize IT-based strategies and build up the e-pedagogical platform. The first characterization of both the technology and the teacher team will be that they are to be described as innovative and up-front. But during the first year, the teacher teams also show how in a professional sense online teachers depend on "sticking to the conventional procedure", as the teachers were asking for "business as usual". This observed double logic stresses that being in an innovative unpredictable process also demands routines and well-known procedures.

Case studies and conversations with teachers involved in the developing of Online BA and Master's Degrees in Dentistry at the University of Michigan [30] further confirmed that by stressing the importance of using "the already existing IT-platform" and by using "the ordinary IT-tools" in the e-pedagogical platform. And while working with the curriculum, the Online dentist teacher teams ask the institution: "not to renew during the process". "We depend on stability" the teachers stressed, and as one of the teachers continue:

> When it comes to technology, there is nothing fancy about the Online course. Actually, we are very sad when something "new" happens on the UM platform. We depend on the system, and depending on that system means functioning like "business as usual". The degree of usability is at a maximum level as long everything just functions like normal." (Cit. Borgnakke 2012, online teacher conversation, UM Dentistry)

Following the teacher's professional voice there will be a version of the IT platform in which you highlight questions about curriculum and didactics, almost forgetting the IT part. But it is also the teacher's voice reminding of the fact that online education is "different", and not only an electrified education. As a member of the teacher team at the Danish online nursing programme, NETeducation, formulated in a newsletter:

> "What is it then about being so different and what are the demands of my role as a teacher? One of the biggest differences and challenges is that I am not seeing the student face-to-face that often. It therefore feels harder to get to learn to know the students. It feels harder to follow the student's process of learning and hard to know if they have gained the learning result predicted in the process of teaching. Another huge difference is

[30] Karen Borgnakke collected material for case studies in IT-based learning contexts and did field observations on the campus of University of Michigan October- November 2012. Descriptions of Online Dental see further Gwozek et al. (2011) and Springfield et al. (2012).

> that the teaching form I used on the ordinary courses such as, e.g. lectures or "classroom teaching with discussion" cannot necessarily be transformed to online education. Online education therefore asks for totally different demands to the process of planning and teaching." (Cit. newsletter no. 2 VIA University College)

Following these teacher teams being a part of the first year of the NETeducation, you realize not only what is conceptualized as "new" and different demands, but also what we need to appreciate and secure from the "old" face-to-face teaching. To mix and to blend seem to also be a fruitful strategy in a broader organizational sense, in which the institution makes sure that the Online students will be offered phases with clinical practice, face-to-face seminars, tutoring, etc.

Summarizing the ethnographic principle, the examples given above mean that the statement "following the field using blended methods" literally speaking means covering blended organizational actions, networking with the teacher teams preparing the syllabus and assignments, participating in virtual discussions and participating in the students' individual and collaborative work and learning processes. But following the field and the professional voices also means covering new web-based materials and coping with the technical culture and field constructions of ICT and learning platforms.

3. Covering the new materials – coping with the technical culture and constructions of the ICT field

From an organizational and cultural perspective, the new type of material is first and foremost the schools' web-sites and homepages. The homepages can be regarded as a late modern ideal type, and can be conceptualized like Schein's face values (Schein 2004). An important genre addition we recognized at the former IT school cases was The School IT CV, which is comparable with the Curriculum Vitae, but with a focus on the institution (Borgnakke 2009; Laugesen 2012). Today, we can add that websites which include IT CVs refer to the school's IT performativity. Furthermore, for online educational innovation, the IT performance and the websites are vivid. The example in the centre for the current case study is of course NETeducation, namely the IT performance from VIA University College, which is hosting the NETeducation central. The experienced example related to the aforementioned Online UM Dental makes the hosting and performative position very clear, e.g. by giving the Online education a website of their own. But the genres and the vivid character are best illustrated by the newest international project called, Coursera, which offers online university courses. Highly ranked universities such as Stanford University are behind the initiative though having an elite university behind it seems to stress the necessity of what is being up-front, namely the Coursera Portal. This portal is the front door, but it is also like a house, insofar as hosting a range of Online courses. Following the newest development of Coursera, you can see a certain mix between videos, pictures and texts being characteristic. The point of departure is to be described as multi-modality. At the same time we can describe an Online portal such as Coursera as a collection of narratives referring directly to the academic learning context, to the institution, to the teacher team and to the teaching person, as well as to the academic subject matter and the related IT performance.

The new material can be described in the same way as the organizational and cultural concepts from Schein, but needs to be combined with concepts from analyses of organizations being influenced by IT strategies such as the concept of ”technucation” (Søndergaard and Hasse 2012) or ”technacy situated in the learning context” (Borgnakke 2012). Furthermore, it is important to reflect on what Raymond Kolbæk calls ”atitudes to ICT” (Kolbæk 2013). Investigating the field of nursing education, Kolbæk presents an Bourdieu-inspired conceptualization of the construction of the ICT field and of types of nursing students' attitudes and their “ICT habitus and ICT capital”, while also mapping decades of IT implementation (1970-2000). Given this contemporary background, the policy documents and practical implementation are represented by different players attitude and impact on IT based strategies. The IT habitius and ICT capital related to statements differ from ”IT is a matter in its own right” to ”IT is just an online tool with a pencil and paper” to ”IT is an integrated part of the organization's development”.

Kolbæk's data collections refer to surveys (Kolbæk 1999 and Kolbæk 2002) and focus interview mirroring the characteristic process of IT implementation. As shown in Kobæk's analysis, the process starts in the offices and libraries (pcs, information- and searching machines), and seems to be less implemented in a teaching and practical learning context. ”Less implemented” seems to relate to a central theme and contrast constructed in the field between ”warm hands and cold technology”.

The analysis of the IT habitus (identified among the 22 informants) shows how the use of social media has had an impact on both human social relations in the sphere of family and the relation in the sphere of professional nursing work. In the centre of informant statements is the experience of the borders for physical relations being moved, as well as an increasing risk for non-personal relations (ibid.). Closer to the field of nursing education, Kolbæk shows the IT habitus as a construction of the four types called, ”The Advocate, The Sceptic, The Opponent and The Critic”. In the analysis, Kolbæk is coping with the spectra from the optimistic trust in IT based strategies to concepts of IT as a time stealer and a non-serious communication with robot technology as the de-humanized scenario of the future. In the middle of the spectra, you recognize mediated attitudes, but also a sharper critique, e.g. a critique of ”the educational under use” of technology in the teaching and learning practice.

Kolbæk's analysis is important for the empirical analyses of the organizational and cultural aspects, although characteristic tendencies are already conceptualized in Mark Prensky's, *Digital Natives, Digital Immigrants* (Prensky 2001). If the younger generation are digital natives, we can add to Kolbæk's analysis that there is a specific relation between educational culture and the next generation of students. Even so, mapping the organizational culture and the educational process as a whole means following the new common baseline for the classroom: teachers and students being on- and offline and participating in activities described as blended learning and surrounded by IT and media.

To summarize the technical culture means that the IT-based learning context has consequences for not only the next generation of students, but also for the next generation of the classroom.

4. Next generation of classroom

Focussing on the next generation as "the digital classroom", you recognize the new routine related to a blended strategy. To put this in perspective, an analysis on IT school cases shows how the teachers used the blended strategies to make changes in the traditional patterns, "moving from teacher-directed teaching to student-directed working and learning" (Borgnakke 2012).

The strategies refer to progressive traditions such as John Dewey's (1990), "Learning by doing", as well as to the new e-pedagogical tendencies and terms such as "innovation and creativity" combined with project learning (Borgnakke 2004; Hobel 2012). Inspired by Jean Lave and Etienne Wenger (1991), we can further conceptualize IT based learning as situated learning, community of practice and thereby identify newcomer- and old-timer strategies.

Given these general patterns, there are nuances in the field's constructions of ICT-based models and strategies. Nevertheless, in a practical context, we can identify the major challenge referring to both students' profession-oriented project work and to teachers' professional teamwork.

In the case earlier described as UM Online Dental, it is stressed that the IT-based strategies at both the BA and MA levels are aimed at enhancing the student's profession-oriented action and reflection. As one of the leader teams stressed in a conversation about the strategy: "Acting/reflection close to the professional standard is implicit in the reference for the development". Further refers the leader to the professional team as a background for the group and as the basic unit. As the leader puts it: "The professional team is certainly groups and one learns and reflects better in groups, therefore we consider the group to be the unit." At the same time, the leader exemplified and summarized the important stages for the IT-based learning process, descriped as:

"The Triple Jump

1. The students start with ideas and a description of a patient situation;
2. The students realize the pressure from the professional practice, and are able to raise the question of "what to do";
3. The students are forced to reflect (diagnosis/treatment, suggestions) and decide "what I can do".

When asked how the IT tools and IT-based strategies are helping these jumps, the leader answers that "stage 2" in particular is full of oppertunities, e.g. the database." (cit. Leader conversation UM, Borgnakke 2012, field notes).

Against this backdrop, the most important issues for the IT-based learning context are stressed as the following three:

- "The degree of integration – to which degree are the IT tools integrated into the daily routine of teaching and in the learning practice?
- The ideal type decides (or the context decides) in terms of callings, such as the classic lecture calling for a web-cast or podcast, the classroom teaching calling for blended learning, a flipped classroom and project work and the student-oriented group work calling for the IT tools to be implemented.
- The process of learning and the basic forms"

(Borgnakke 2012 UM, field notes).

With reference to conversations with the leading- and teaching teams at UM Dental, the conversation made it clear that professional self-evaluation and programme evaluation were high on the agenda. The teacher teams further referred to articles in the

Journal of Dental Education and hereby they referred to the important steps being similar to the title, *Using Online Program Development to Foster Curricular Change and Innovation* (Gwozdek et al. 2011) in addition to being stressed in the articles abstract: "*Program evaluation is a necessary component of curricular change and innovation"* (Springfield et al. 2012).

From the teachers' point of view, this self-evaluation went hand-in-hand with "the four important experiences" from the ongoing development work with online learning. As stressed by Borgnakke in field notes:

"(...) when asked, the teacher highlighted the four most important experiences from the process with the Online programme by giving me the following list:

1) Developing the curriculum; 2) Acting like a team; 3) To make it happen; 4) Contribution to lifelong learning."

(Cit. field notes UM, Borgnakke 2012).

In this case "developing the curriculum" and "acting like a team" were closely related to challenges for educational development among professionals. At the same time, we recognize how the challenge is also related to the developing of the Online setting as e-pedagogical strategies aimed at the students' activities. As stressed below, the important experiences from the Danish Online learning programme from the first phase shall be seen in light of the new e-pedagogical strategies.

5. In light of e-pedagogical strategies

The development project is called NETeducation, which is stressed as a web-based education in Nursing, hosted by VIA University College. From the outset, the purpose of the NETeducation was described by the planning team as an attempt to develop an e-didactic approach to professional learning (Nielsen et al. 2011), but it was also stressed that this should be seen in relation to the technology-based healthcare: "To develop an e-didactic concept that through the form of planning can prepare students to be included as employees in a digital and high-tech healthcare" (ibid.). Or as highlighted in the information material on the homepage of NETeducation for the next year of study:

"The Net-based Nursing Program is an offer for you, if you

- want to be in front in IT-based- and user-friendly approaches in the nursing and welfare sector;
- find it interesting to use IT and social media;
- want to learn via digital media in close collaborative work with fellow students;
- need flexible time for studies and courses"

(Cit. NETeducation, InFo-material Aarhus 2013).

As can be seen, this focus on preparing students to enter into a digital and high-tech healthcare is a part of the innovative approach and its different aims. Firstly, the e-pedagogical strategy must be innovative by integrating technology development in education planning, and secondly by creating the curriculum development. Thirdly, the strategy must be open for additions during the process and be open for the students' own learning strategies and motivations. In planning NETeducation as an innovative educational project, it is expected that by the students' work through a variety of digital media, they achieve, in addition to understanding the professional content, an

understanding of the use of digital media in the future of nursing practice. Against this background, NETeducation writes itself into the international discourse on the digitized high-tech healthcare that challenges professional education programmes to develop their curriculum and support lifelong learning. In this respect, we find broad similarities with Online Michigan. On the other hand, it is pointed out that there are also differences in the e-pedagogic double strategy as represented by the Danish Online education. Although e-pedagogic is primarily oriented towards the development of scholastic dimensions, it also embraces the clinical settings - at least by and in line with the other Danish web-based education, being oriented towards the entire nursing education. In addition, the web-based courses and e-pedagogic strategies is in a continuous dialogue with the other ordinary nursing education which they both look at and alternate with.

However, NETeducation in VIA has made a conscious choice to clarify the special e-pedagogical approach and hereby try Gilly Salmon's so-called, “five-stage model of teaching and learning online” (Salmon 2011). The Curriculum team described the model as both a ”stage model” and as a ”scaffolding model”. And as quoted below, the very e-pedagogical centre for a student’s activity is the so-called e-tivities:

”The model has two basic elements: an E-moderator, who along the way makes the summary of the discussions and e-tivities, which are activities that students should perform (purpose, goal and deadline). Each stage requires the participants (students and teachers) to master certain technical skills.” (Cit. ”NETeducation på langs set i forhold til Salmon og teknologi” (NETeducation longitudinally in proportion to Salmon and technology) Document, The Curriculum team, VIAuc).

As with other ordinary nurse educations, NETeducation includes both academic and professionally oriented elements, so therefore the e-pedagogical strategy needs to be aimed both to the scholastic and clinical professional learning context.

The theoretical learning context is organized by alternating between online- and offline periods and face-to-face seminar days on campus, while the NETeducation follows the trend of a blended- and profession-oriented learning approach (Borgnakke 2009; Gworzek et al. 2011; Springfield et al. 2012). Although Salmon's e-pedagogical concept is moderated, it remains as an argument for both e-tivities described in relation to the five stages and for seminar days described in relation to the ongoing course. Against this background, the reflections on further details such as considerations of seminar days also refer to local reports in which the heads of training divisions expected that the blended learning approach provides a better retention for the students (Pasgaard 2012). Nonetheless, the main argument was the widespread doxa among teachers, namely that even education in the theoretical part of a profession such as nursing requires time being spent together by students and teachers.

The clinical learning context in NETeducation is focusing on the practical importance of learning in the communities of practice (Lave and Wenger 1991). As described on the homepage, the students' innovative use of a wide range of digital media is expected to continue into the clinical learning context, as an emerging critical understanding of technology is also expected. In light of the chosen e-pedagogical strategies, the first semester of the NETeducation has displayed difficulties in finding clinical internships that match the technology development, which seems to have captured the students in these non-simultaneous developments. In part, the students are new in the nursing profession and could be expected to start with a legitimate peripheral participation as newcomers (ibid.), while in part they come with a digital knowledge that does not exist in the communities of practice. The evaluation showed

that these no-simultaneous developments were tackled very differently: the students in some departments taught the communities of practice, whereas it was pointed out to other students that the digital focus was not part of the learning context. For NETeducation, the e-pedagogical challenge will therefore be one in the series of the challenges of being in a profession with a focus on aligning the interaction between scholastic learning and practical learning.

6. Organizational learning, first phases and start-up troubles

In order to collect experience, NETeducation, like Michigan, has professional self-evaluation as a part of its framework to ensure coherence between the responsibility to act in order to investigate the action and to follow up (Dahler-Larsen 2003). The self-evaluation is going on in the community, where it gives voice to the teachers in both clinical and theoretical settings, to the students and to the IT team. The project participants can thereby ensure that the evaluation is used for continuous learning and development.

NETeducation gets a student evaluation a half year into the programme, which reads: "It has been so much more fun to go on Module 2 than on Module 1, because some of those start-up problems and frustrations over networks, the web page was gone... it's been 200% more fun" (Cit. Student Module 2). As stated, there has been an evolution, but there have also been some ”start-up problems”. The IT aspects should be expected by NETeducation to be a challenge, as there was not an optimal LMS system available and teachers were in IT-related skills development. The students evaluated that there has also been technical failures with links that do not work in the students’ module guides, learning resources which cannot be opened and the like. All this is something that has stressed the students, since it goes beyond their planning as they first discover errors when seated and should have worked with the subject material. Nor was the NETeducation prepared for the students having a widespread lack of IT skills. There were some students who had achieved technacy (Borgnakke 2012), but also a student who had heard of Google, but not yet attempted to use it.

Feedback has also been something that affects both the students' learning strategies and educational planning. The teachers have e-tivities planned with feedback given by them, as well as feedback from fellow students in the form of, e.g. two study groups that comment on each other's work. The students prefer feedback only from the teacher, and that it is given in relation to all e-tivities, since they feel it is their only way to know if they have understood things right. At the same time, the student usually only reads feedback if it falls during or right after work with the e-tivity; otherwise, the students are on to the next thing. For teachers, it has been a time problem and a didactic challenge. These included the increased time needed if there feedback to be given on everything, but also to provide feedback while it is still perceived as appropriate to receive.

The biggest surprise for NETeducation was the students' perception that they are being overlooked in relation to the campus-based education. Students at NETeducation believe that they are not offered the same social and academic extra-curricular activities that the other students, in which the teacher team’s experience is that rarely has a class been the subject of so much consideration, discussion and attention.

But there has not only been “start-up problems”, as the students have continuously evaluated the e-tivities and the structure that they provide positively.

7. Paradoxes

With the choice of Salmon's e-pedagogical strategy, with e-tivities as the main didactic element, a structure is also provided for both teachers and students.

Project NETeducation is aware that the clarification of the specific e-pedagogical strategy is changing the teachers' didactic approach.

> ”One can learn with IT, but learning and the learning environment should be organized to take into account the difference between e-learning and face-to-face learning”. (Cit. ”Introduction to e-didactics”. Document, Curriculum team, VIAuc)

But it has nevertheless been a surprise to the Curriculum team as to how long this didactic transformation has taken. As one of the teachers previously stated in the article, even if their workload is situated differently, the teachers cannot simply transfer their normal teaching activities to the online course, which has led to organizational influences, and for some of the teachers the desire for ”business as usual”.

The teachers are also fascinated by the structure. At their evaluation, they was very absorbed by the fact that they could not follow the students' work process, and thus not help in guiding them to higher learning outcomes. Students are introduced to a workflow in the e-tivities, and then nothing visibly happens to the teachers. The reason for this is not because the students gather on Facebook or other external media, but because they make use of some of the digital media that the NETeducation provides. Some groups work on- and offline in closed forums in the LMS system, and only release the finished product in the open forum. Other groups interact almost only through Lync (an extended kind of Skype), and also only release their finished product in the open forum. During an evaluation with the teacher’s team, where this expectation was given much speaking time, the external evaluator wondered whether teachers can follow the students working process in the campus-based nursing education. The teacher team's self-understanding was mirrored, and they started wondering how this expectation had been created in relation to NETeducation.

With a background in Salmon’s description (Salmon 2002), NETeducation has developed a template that all teachers must follow. E-tivities provide students with a structured guide as to how they are expected to work with the academic content from a motivational, purposeful and detailed description of tasks, learning resources and feedback. E-tivities will be formulated as concrete learning activities to be done in relation to the five stages from the basic technical practical level to the reflexive level, building knowledge and sharing resources with other students. NETeducation has added deadlines and study load to that, which has given the students a management tool that the vast majority of the students have accepted with open arms.

The students are part of a bit of a paradox, as they have all chosen NETeducation because of the flexibility it has given them. Flexibility is often necessary because of offline activities such as obligations to family or the necessity of having to work alongside one another. The paradox arises because while students want flexibility, they are also incredibly delighted with e-tivities and their wealth of detail compared to what

is expected of them and when. The students find that they provide structure, thus helping them to plan their study, which strongly requires them to actively study.

> "You can go in and look in your calendar ... in this week we have this e-tivity, well, then we start there, and then you read the e-tivity through and then from this we work through the topic, otherwise I never get through the topics, ... so I do not know where to start and where to end if we had not ..." (Cit. student, Module 1 evaluation).

Secondly, e-tivities has a clear expectation from the teacher, and all e-activities include a group-based part that is particularly binding, since all work is otherwise left to the others in the study group. Flexibility is thereby reduced to a certain extent, while the strong structuring can also create an expectation that e-tivities can control all types of learning processes. In any case, some of the students wondered "that there was no e-tivities in clinical training, now it had to be a web-based education" (Cit. student Module 1).

Even though the students have chosen an online education, several of them seem to have elements of the usual scholastic thinking as a sounding board. For example, at the end of a seminar day a student exclaims that they should have more of this "real education", which several nod in agreement with. Initially, several students also had the experience that they were standing without teachers. Although opportunities for guidance and the like were described in the e-tivities, they evaluated that they should "learn" that the teachers were also online. Hence, it was a process that they had to go through. When this is compared with the paradox about flexibility and structure, it could give the impression that the NET students see themselves as traditional students, but with more freedom. They want teachers to give structure to their learning, but with freedom. It should be flexible, but more like face-to-face teaching. The students are then almost doubly linked since they fetch elements from being a traditional campus-based student and being NET students.

In the spring of 2013, a half year into NETeducation, the self-evaluation has been extended with traditional ethnographic observations based on interaction and face-to-face communication on seminar days and in clinical settings. Observations have also been made in relation to how the teaching and learning is organized in the Digital Classroom and how the new routine is related to the Digital Classroom and its settings with on- and offline interactions, since a vast majority of the students' time is spent online. Field observations at the student's home are seen as a methodological opportunity to shed light on how the students create their own strategies and space for interaction, communication and learning.

8. Summarizing the basic principle

Concerning the basic principle "following the field of practice" and the necessity of rethinking the learning context in light of the digital conditions, we need to renew the basic concepts of 'the field, the context and the space' related to the classic ethnographic approach and fieldwork (Marcus 1995; Borgnakke 1996, 1999). Doing that we are in accordance with the latest interpretation of ethnography in Online communities (Hammersley 2006; Hernandez Hernandez et al. 2013; Webster and Marques da Silva 2013). But we also want to stress along with Leander and McKim (Leander and McKim 2002), the necessity of a rethinking moving beyond a place-

based ethnography. In the article, *Tracing the Everyday "Sitings" of Adolescents on the Internet: A strategic adaptation of ethnography across online and offline spaces*, Leander and McKim argue for the need to move beyond place-based ethnography and develop ethnographic methodologies that follow the moving, traveling practices of adolescents on- and offline. Here, the authors challenged the conventional ethnography on questions such as place, identity and participant observation, while also challenging what they called "a common misconception of the Internet" as being radically separate from everyday life. Next, they stressed that the methodologies "following connections and circulations in research that travel across online- and offline spaces" include tracing the flows of objects, texts and the embedded multiple contexts.

Leander and McKim made the above statement in 2002 and the ongoing e-pedagogical development has made the statements even more obvious. On behalf of the ongoing projects, we will state that there is no possible common misconception. The Internet is not to be regarded as radically separate from everyday life, but as a very integrated part of everyday life. And as shown in the first field observations of the NETeducation students at their home work places and spaces, the students are not only using the NET educational platform, working with e-tivities on a daily basis. They are also add their own daily routine of using a mix of the Internet, mobile phones and Facebook, "all the time" working with their own assignments and networking with fellow students (field note Lyngsø fall 2013).

On behalf of these on-going observations and projects in which the online educational settings and e-pedagogical frameworks will be investigated by following the course, we are therefore confronted with both the basic principle of ethnography and of communication and confronted with a blended strategy integrating organizational ethnography, classroom and learning research into a common framework coping with the digital every day conditions (Borgnakke 2013a, 2013b).

From an organizational perspective, the ethnographic framework will sharpen the complex of e-pedagogical and professional IT didactical issues. At the same time, close-up studies will shed light on the process of online learning as seen from the student's perspective. Following online and offline activities in their original time and practical setting, observations in the students' homes seem to generate the needed data collection mirroring how the students create their own strategies and space for interaction, communication and learning.

In the current empirical phases, both the self-evaluation and research projects show how strategies for following on- and offline activities have an impact on the basic principle, as well as on the principle of ecological validity. In a concrete manner, we are therefore confronted with the question of ecological validity as a proper mix of multi-methods and flows between policy documents, institutionally mediated communication between teachers and students, a mix between learning contexts, a mix between online and offline text, oral and written, images and messages, etc. As a result, the blended methodology is constantly challenged by classic ethnographic approaches and digital processes. Or we may say that the digital processes are challenged by being classically observed and reflected in terms of ethnographically mapping the flow and the field of relation.

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'Roll-out neoliberalism' through one-to-one laptop investments in Swedish schools

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Abstract. This paper calls for the need to better understand how the marketization of public sector in Sweden has changed the way policies are produced and translated in to action. Its aim is to contribute to and enable a debate about consequences of privatisation. It does so taking IT-education policy as a case and takes a point of departure in the most recent efforts made by government and educational leaders to push ICT into educational settings, in the so called one-to-one laptop initiatives. The aim of the paper is to discuss how the use of a methodological design that is a synergistic research design between social network analysis and ethnography, called network ethnography can be used to investigate how educational policy is being 'done' in new digital locations which involve new forms of social structuring that emphasize flows and mobility of people, capital and ideas.

Keywords. Network ethnography, educational policy, marketization of public sector, one-to-one laptop, ICT, Educational technology

1. Introduction

Based on meta-analyses of research on restructuring in relation to education and health professions in Europe, we have previously highlighted the presence of common cycles of public to private transformation in production relations in these professions and their institutions (Beach 2010; Player-Koro 2012b). State involvement was described an important intermediary in these processes, by which relationships that were formerly largely untainted by commerce have successively become relationships involving the creation of profit (Beach 2010). The possibility of profit is now a clear and much debated characteristic of the Swedish educational system. These changes were made possible through new policies that opened up for market reforms of public sector in line with the neo-liberal philosophy of restructuring that have taken place in all Western societies.

This paper has analysed recent IT-education policy and municipal investments in one computer to every student and teacher in school as a case for a deeper investigation about the mechanisms behind and effects of the past two decades of the influx of varying forms of marketization and the development of profit interests and possibilities in the Swedish public sector in general, and in public education in particular.

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2. Aims and focus

This paper calls for the need to better understand how the marketization of public sector in Sweden has changed the way policies are produced and translated in to action. Its aim is to contribute to and enable a debate about consequences of privatisation. It does so taking IT-education policy as a case and takes a point of departure in the most recent efforts made by government and educational leaders to push ICT into educational settings, in the so called one-to-one laptop initiatives. These are global as well as national initiatives. They are designed to provide every teacher and student in school with a laptop computer and to expand the digital infrastructure of the schools.

One-to-one laptop initiatives could be defined, as part of the current phase of 'roll-out' neoliberalism as examples of emerging global policy networks. They represent a type of private sector involvement consisting of business, social enterprise and philanthropy that offers solutions to the current 'problems' of state education (Ball, 2012). However, the networks also provide new voices within national policy talk and are therefore also important in producing legitimate knowledge about education and the educational system inside nation-states, including defining what educational problems exist and how to best deal with them.

The aim of the paper is to discuss how ethnographic methods can be used to investigate how educational policy is being 'done' in new digital locations which involve new forms of social structuring that emphasize flows and mobility of people, capital and ideas (Ball 2012; Howard, 2002). The approach can be compared with Gallagher and Freeman's (2011) approach to digital or Internet ethnography described in the journal *Ethnography and Education*. In their work they used software such as *Adobe Connect*, *Survey Monkey*, a project *Wiki* and a blog, to establish virtual communication across research sites (Gallagher and Freeman, 2011). Our research is less linguistically complex and technologically elaborate. We mainly make use of surfing and searching functions on the Internet to find and produce data. These procedures will be described in more detail in the next section.

3. Methods

The methodological design that has been used for this research is a synergistic research design between *social network analysis* as briefly introduced above and *ethnography,* called *network ethnography,* developed by Howard (Howard 2002). The argument for the development of network ethnography was, according to Howard, that there was a need for new methodological innovations in order to keep pace with today's social dynamics through digital channels (Howard 2002). This methodological approach has also been used in research by Ball (Ball 2012) to track and map global policy networks through the Internet.

Social network analysis is in this approach used to justify and select a case or a field for the production of research. The field however is not a physical location; instead it is structure of social relationships mediated by different forms of Internet channels such as web-pages, videos, PowerPoint's, blogs, tweets (a tweet is a post or status update on the microblogging service Twitter), Facebook pages and published interviews etc. that operate as intermediaries between people and organisations (Ball 2012; Howard 2002). They create different opportunities in today's social media landscape for people to interact, share ideas, collaborate and form partnerships. Our

aim has been to become involved in and explore processes involving these forms of networking and this forms the basis for our data production.

In some senses some might claim that our research is outside of ethnography as it doesn't meet people in face-to-face actual social interactions and that we therefore know very little, if anything at all, about our human subjects. However, as Gallagher and Freeman (Freeman 2011) describe, we see our work as innovatively ethnographic. We see things as Hammersley (Hammersley 2006) does. We recognise that although there are limits to internet data from a traditional ethnographic point of view, concerning for instance who the writers of online contributions are and what their purposes and circumstances are, it can be argued that online interaction operates in an orderly fashion and participants display enough through their contributions for an ethnographer who is studying online practices to produce sufficient data and insight for making an ethnographic account.

Ethnographic methods are used to explore and observe everyday interactions; to capture community symbols, keywords and try to understand the culture that emerges from the daily interactions between actors and organisations. An important part in this is also to see how different actors and organisations are positioning themselves and thereby gain influence and power (Howard 2002). This is exactly what we are doing and, in addition, by inhabiting and using the same media and tools as the actors in question uses themselves.

The data production for this paper has been done through Internet searches around organisations and associations in Sweden that have the promotion of the use of digital technologies in schools and education as their main goal. The connections to edu-business, in this case most often to Apple, appears constantly. The connections between organisations and private companies takes place through those actors involved in the organization and who in some cases also appeared to be the owners of businesses that sell goods and services to the education sector.

The material captured through the search around organizations and associations was collected mainly through links or texts in each organization or association's website. The identified websites also contained, amongst other things, information about key persons in the organisation. Key-persons could thereafter be followed through websites but there was also possible to trace, follow and even interact with these people through different social media applications (such as Facebook, blogs and tweets) in which they create, share, and exchange information and ideas.

4. Results

The one-to-one laptop initiatives that have begun to comprise a major municipal investment in schools in Sweden are processes whereby all pupils and teachers are equipped with a laptop and where school It-infrastructure is being expanded. More than 220 of Sweden's 290 municipalities currently have an investment of this type based on figures from a website set up by the organisation *the Association for Computers in Education* (see heading 'Policy network in Sweden)[32].

The argument for the investments is that this will support academic learning and is an example of the latest substantial efforts made in Sweden as well as in many other countries to push ICT into educational settings (Cuban 2001). It has had the effect that

[32] http://www2.diu.se/framlar/egen-dator/

the market turnover of student computers in Sweden has raised dramatically. The market for student computers in Sweden turns around a billion dollars per year and when it is fully developed the market sale for Swedish school computers are expected to be around two billion dollar per year [33].

There is thus no doubt that the sale of IT equipment to school is, and has for a long time been big business. The promise to retrofitting the purpose and practice of education through the use of digital technology has from the earliest initiatives that appeared in the mid 1990s mainly been sponsored from the IT industry. Microsoft initiated this with their Microsoft Anytime, Anywhere Learning program[34]. In recent years Apple Computer Inc. has become more dominant as an actor in this area (Penuel 2006; Selwyn, Gorard and Williams, 2001) (see also figure 1).

These forms of initiatives are however not only a technological investment and development, they also constitute an arena for new forms of governance that are enacted through a mix of partnerships across sectorial and organizational boundaries (Ball 2012). These networks between actors spread a message or discourse about educational goals and problems and, more importantly, they also offer a solution to these problems that could be viewed more or less as a belief system. This is done by reference to research often dedicated to few key persons that in many cases has clear links to the IT industry.

4.1. Network connections for money and ideas

The search process took its point of departure from the first one-to-one project that was initiated in a Swedish municipally. This project emanated from the headmaster of one of the local schools, who together with the Chief Development Officer for the School Board, had heard about an initiative in the state of Maine in the United States. This led to some politicians, civil servants, teachers and school leaders going on a field trip to Maine, which had the consequence that the municipality decided to invest in a similar project (Tallvid and Hallerström, 2009). The link to Maine was easy to find and through this also threads to relationships between one-to-one initiatives and different actors also involved in edu-business would then also be identified. Figure 1, maps an example of these linkages.

Figure 1 aims to indicate some of the threads and relations on a global level between Sweden and the State of Maine project, USA. This figure can be used to illustrate a network for the dissemination of both ideas and money. As the figure shows, the concept of 1:1 laptop computing in its current form has its origin in Maine where the governor Angus King (figure 1), in the year of 2000 proposed that a 70 million dollar surplus in the state budget should be used to on the one hand provide all 7th and 8th grade student and their teachers with laptop computers and on the other to create a wireless internet infrastructure in all of Maine's middle schools. Angus King had been inspired by a conversation with Seymour Papert. Seymour Papert, considered by many as a leader in the educational technology community, not least through the publication *Mindstorms* in 1980 (Papert, 1993), where he wrote about the connection between technologies and development of higher order thinking skills and practices. Papert has however been working closely with Apple since the 60s. In 1967 he launched his

[33] http://sverigesradio.se/sida/artikel.aspx?programid=125&artikel=5398572
[34] http://www.microsoft.com/en-us/news/features/2000/sept00/09-11aal.aspx

LOGO programming language, which was later, incorporated into Apple's operating system (Figure 1).

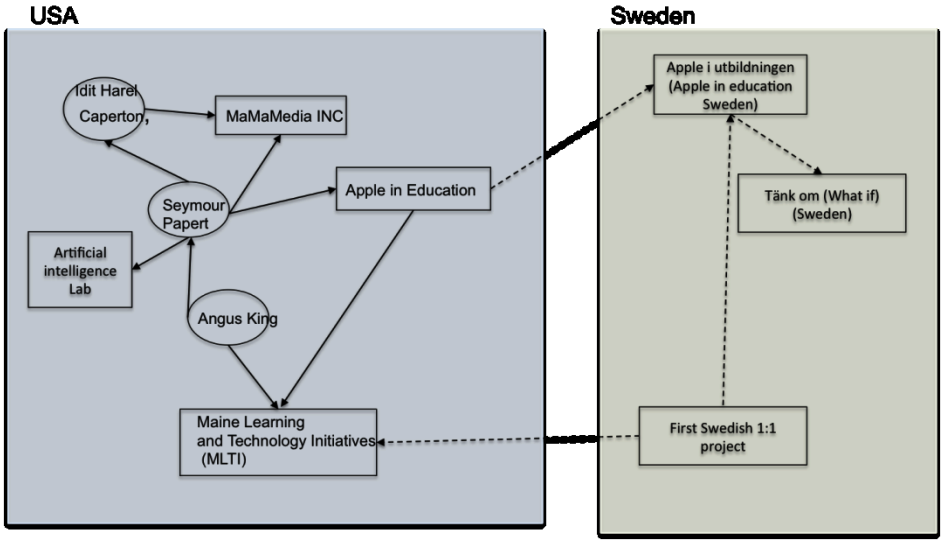

Figure 1. Network relations on a global level

Seymour Papert's publication of *Mindstorm* can also be seen as the origin for the discourse that since then has been used by leaders in the educational technology community as the main argumentation for implementing digital technologies in education. This discourse describes a scenario where the uses of educational technologies are considered contributing to higher order thinking skills and practices through student centred authentic (often some kind of problem-based, innovative or creative) learning. This way of learning are described as dramatically inevitable change educational practice (Harris 2005). Moreover, this kind of technology integration is also considered as the only way to successfully integrate educational technology in education (Nivala 2009; Player-Koro 2012a).

Player-Koro (2012 a, b) has defined this kind of discourse as a 'general ICT impact' discourse that tells a story about present society, digital technology and what could and should be happening with teachers, students and schools, if the technology is correctly used in educational setting. This discourse has also for decades been underpinning studies in the research field of ICT in education. However, on the other hand, it has been very difficult to find actual evidence in research that confirms that digital educational technology has enhanced educational standards in the way predicted in the 'general ICT impact' discourse (Cuban 2001; Player-Koro 2012b; Selwyn and Oliver, 2011). The most remarkable thing in this is that very few researchers contradict the core beliefs and values about educational technologies. Instead, they often come to the conclusion that the school does not live up to expectations because teachers lack sufficient interest and/or skills (Cuban 2001; Gouseti 2010; Player-Koro 2012b).

Several researchers have argued that the ideas in the 'general ICT impact' discourse originated from marketing strategies (Harris 2005; Nivala 2009; Robertson 2003), which even the present network analysis may be a support for. The Apple Corporation has always been a significant force and an active part in both the concept of 1:1 laptop computing as in other investments in educational technology (one example is the project Apple Classroom of tomorrow (ACOT) (Sandholtz, Ringstaff

and Dwyer, 1997). A brief overview of the interlinked network between the Maine Learning Initiative (MLTI) and Apple is illustrated in figure 1. Idit Harel Caperton was Papert's PhD student. Together with him and MIT she developed a constructionist-inspired educational model called "Instructional Software Design Paradigm Learning." She also founded Mama Media Incorporated[35]. This service conveys media to adolescents and their parents. The link to Sweden is established through Apple.

4.2. Policy network in Sweden

As the search continued with the focus on Swedish one-to-one laptop computing it became increasingly clear that an important node for information flow (policy flow) and policy relations was significantly comprised by two national exhibitions and conferences. One of these is *the future of learning* (Framtidens lärande) arranged by *the Association for Computers in Education* (Föreningen Datorn i utbildningen (DIU)). On their website you can read the following text: 'Association DIU has since the mid-1980s worked to build long term networks and exchange experiences and knowledge about ICT and learning in the Swedish Comprehensive School. Since 2004, the association has developed into a major national player. It organizes various activities and builds networks between schools, communities, organizations, government agencies and scientists to create 'a school with modern forms of work that develop skills in tune with the times' (http://www.diu.se/diu.asp?val=fdiu).

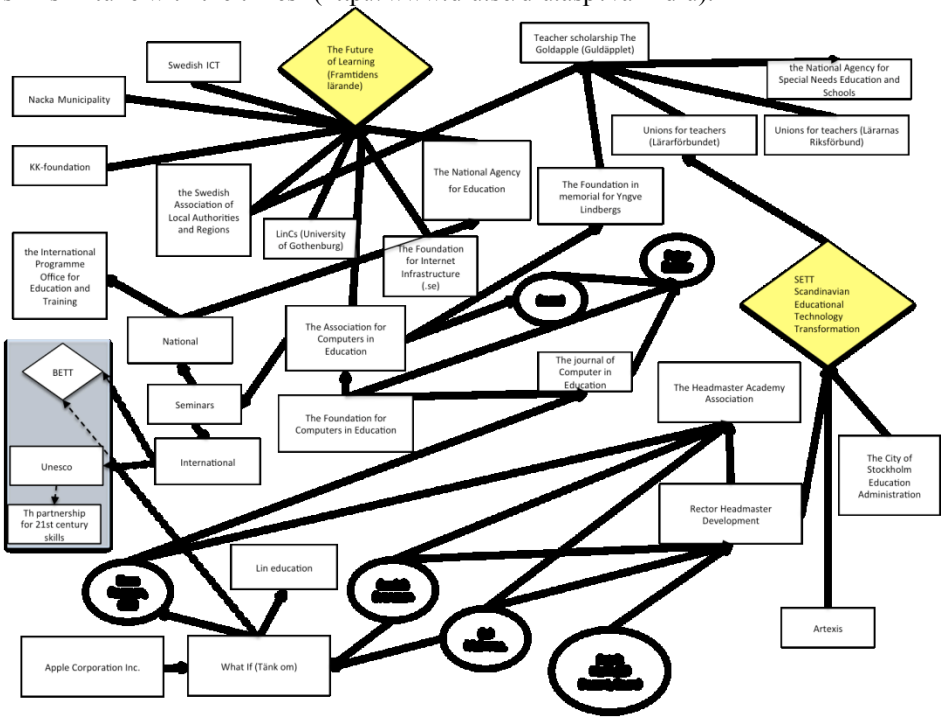

Figure 2. Networks relation on a national (Swedish) level

[35] http://www.mamamedia.com/

The other event is *SETT* (Scandinavian Educational Technology Transformation)[36]. This event is, according to the *SETT* website, Scandinavia's largest exhibition and conference within innovative and modern learning. It focuses on 'inspiring the school's professional employees to increase their curiosity, and to gain more knowledge regarding how the modern learning can be developed in schools toward higher achievement' (http://www.settdagarna.se/en). Figure 2 maps some threads and relationships between actors and organisations that have been traced through research in connection to *SETT* and *The future of learning*.

Figure 2 gives an indication of the complex, interlinked networks and relations concerning whom the ideas and products linked to one-to-one laptop initiatives are promoted and disseminated by. More partners and organisations that are involved in these events are listed on their websites[37][38]. We must add, however, that in the framework of the present paper it is only possible to provide a snapshot over the multifaceted relationships that occur and give a few examples of how these relations work.

The main similarity between the two Swedish exhibitions and conferences (*SETT* and *The future of learning*) that also constitutes a common denominator between them is a common discourse about a shared problem and a shared problem solving process which offers opportunities to participate in education governance. This is according to Ball (2012) a typical constitution of policy networks and figure 2 illustrates the multifaceted forms of relationships between government (The National Agency for Education (Skolverket)), business, philanthropy (in the form of various foundations), municipal departments, and global organisations such as for example UNESCO (Ball 2012).

The future of learning is run by an association (called *the Association for Computers in Education*) with a management board composed mostly of people working in local government and academia, but also a private IT consultant is member of the board. The association is financed from the Foundation *Computers in Education* that is a non-profit, independent foundation, which operates in collaboration with the Association for Computers in Education (figure 2). The Association for Computers in Education presents itself as described above as having at their main goal 'to work to build long term network and exchange experiences and knowledge about ICT and learning in Swedish youth school' (www.diu.se). In other words it could be said that their mission is the dissemination of ideas about learning with educational technology.

The main medium for the dissemination of ideas is *the journal of Computers in Education*. A key person for this association is Peter Becker. He is the editor of the journal, president of the Association and coordinator of the Conference of the Future Learning. In this network Becker has a role as a thinker and a policy entrepreneur. He directs, serves, writes editorials in the journal, and speaks at a variety of events. He also has a variety of relationships with governments, teachers' unions and international connections.

SETT on the other hand has been organized two times 2012, and 2013. SETT has a clearer commercial connection and is organized by Artexis and the Headmaster

[36] http://www.settdagarna.se/en

[37] List of companies and organizations involved in the Conference The future of learning in 2013 http://www2.diu.se/framlar/utstallare/

[38] List of companies and organizations involved in the Conference SETT in 2013 http://www.settdagarna.se/Medverkande-foretag

Academy Development Inc. (Rektorskademin utveckling (RAU))[39] in collaboration with the City of Stockholm Education Administration and one of the main Teacher Unions. The Headmaster Academy is a company that sells ideas for improving education. On there website you could read that: 'An important area for us at Headmaster Academy Development Inc. is starting up new ideas, thoughts and activities. In short, we like ground-breaking new projects'[40].

The difference between SETT and *The future of learning* is that *The future of learning* has a long history of trying to actively influence the education system through decision-makers in local and central government agencies. Although there are commercial actors involved, they have a more modest role. *SETT* on the other hand has a clearer commercial connection. It is driven by clear commercial interests, that also conduct a competitive activity against *The future of learning*.

SETT has grown rapidly and there is evidence that they will outmanoeuvre *The future of learning* not the least by having a significantly lower participation fees. The consequence of this is amongst other things that keypersons related to SETT that could be defined as 'policy entrepreneurs' have clear economic interests and that they are very active in influencing both municipal and state decision makers. Some of the keypersons involved emerge in the text below.

The Headmaster Academy Development Inc. is a corporation owned by Fredrik Svensson and Caj Malmros who also founded the *Headmaster Academy Association* and the company *What If* (Tänk om), which is an association of educational consultants for school that describes itself as the leading educational consultant for 1:1 in Sweden and that was formerly a part of the *Apple*[41]. However, *Apple* and *What if* are still strongly connected. Apple computers are often sold as a concept to the schools along with training conducted by *What If*. The premise is that for any computer that a municipality/school buys you also get a "voucher" for 400 SEK, which can be used for training at *What If*.

Moreover, *What If* (Tänk om) consultants are people who are employed to work on school issues at different levels of the municipality (teachers, IT coordinators, principals for example)[42]. At the same time they are also working extra for the company *What If*. In other words, the municipal employees working as education consultants for the company are sitting on two seats. They have one foot in *What if*, whose business is directly related to how many computers Apple manages to sell the Swedish schools, and have at the same time the opportunity to influence, through their work in the municipality, the purchase of educational technology and services to the municipality where they are employed. CEO for *What If* is Hans Renman who has been on the board for *the Headmaster Academy* for many years.

5. Concluding discussion

This paper takes its point of departure from the transformation of public sector during at least the past two decades. It takes one-to-one laptop initiatives as a case for exploring and discussing how the public to private transformation in public education

[39] http://rautveckling.se/
[40] http://rautveckling.se/
[41] http://www.tankom.nu
[42] http://www.tankom.nu/medarbetare/

works through global network connections involving diverse participants with a variety of interests (Ball 2012; Beach 2010).

Network ethnography was used as a methodological framework for the research. Social network analysis was used to select the field of analysis, which in this case ended up in the selection of two Swedish exhibitions and conferences: specifically the *SETT* and *The future of learning* networks respectively. Some threads and relationships that work through these conferences were taken up and analysed in greater detail than others. The picture that emerged during the analysis was that these IT-education policy networks have been strongly connected with the private market of educational technology for decades. However, it was possible to trace a transformation from more indirect involvement from the private sector, through the conference *The future of learning,* to a more direct involvement, through the *SETT* conference. A small number of key persons that own companies and have clear links to the IT industry organize the SETT conference.

Moreover, there are many implications for the educational system that could be brought forward and discussed on the basis from the research findings discussed in this paper. One of them is how the parallel introduction of new agents in the official re-contextualising field and the weakening of role of the State bureaucracy and professions in the educational re-contextualising field affect the 'Official knowledge' that is to be distributed in educational institutions which we will do in a further study (Bernstein, 2000). The new partnerships that are formed with their common base in educational technology use a specific rhetoric or discourse ('the general ICT impact' discourse') to call for the need for schools to buy computers and technology in order to solve educational problems and enhancing education. This is clearly an economically based discourse that operates in private economic interests primarily, and that takes pedagogical discourses hostage in the process of the valorisation of first ideas and then profit. There is also a clear inter-discursivity at play through the similar rhetoric both in the 'general ICT impact' discourse and the neoliberal rhetoric regarding the problems and possibilities of education, where education is considered important on the one hand but on the other is blamed for being unable to live up to these expectations (Player-Koro, 2012b). More computers in schools are in this case the solution to this problem.

Another question that could be posed according to this analysis is what happens with democracy when 'statework' is outsourced? Or as Bernstein may put it; what consequences will ensue for our society if all agents of symbolic control operate from the private sector?

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Zooming in - Zooming out - using iPad video diaries in ethnographic educational research

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Abstract. This paper presents the use of video diaries in ethnographic educational research among nursing students in Denmark. It is based on the researcher's experiences from an ongoing ethnographic study focusing on the student perspective of being enrolled in a class following an experimental educational model. The paper presents video diaries as a way of generating qualitative data, reflects on the ethical strategies and dilemmas of using video diaries and illuminates the possibilities of allowing students to state their voices when and where they choose.

Keywords. Video diaries, educational ethnography, ethical reflexivity, nursing education, student perspective.

1. Introduction

Educational ethnography is about mapping out the field giving voice to those involved in learning and teaching in diverse learning spaces and time (Hammersley and Atkinson 2007; Borgnakke 1996ab; Borgnakke 2010). Ethnography is also about telling social stories (Murthy 2008). This paper will present and discuss the use of video diaries as one of multiple methods to generate data in an ongoing ethnographic study on nursing students' experiences with being students in a profession-oriented context characterized by shifts between classroom and clinical settings. In addition, the paper will argue that video diaries can capture upfront personal stories of the educational trajectory that are not obtainable in the formal context of a classroom or of clinical settings. Consequently, video diaries add on to the account of data in the study, by integrating stories that are told or observed neither in a classroom nor in clinical settings, stories which - from a student perspective - is of great importance to the educational journey.

This paper reflects the use of video diaries as integrated in ongoing educational ethnographic studies of a class following an experimental educational model. The class was enrolled in 2009 at *The School of Nursing in Aarhus* at the *Faculty of Health, VIA University College* in Denmark. The purpose was to educate more nurses – with the secondary intention of gaining knowledge about other possible ways to perform the education. The class, named the E-class, followed what in the field was called 'an

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experimental educational model based on experienced-based learning' (Nielsen et al. 2011). Based on my analysis of the course material and the evaluations from the internal investigators[44], I would argue that the educational model as an experiment was primarily based on two principles: (1) studies in clinical settings always preceded classroom teaching ("practice-before-theory") and (2) increased time spent in fora/meetings where students, clinical instructors as well as lecturers from the school were present ("the recurrent pedagogical concept"). The class graduated in January 2013.

2. Mixing classic fieldwork and the use of video diaries

As part of an ongoing PhD project, I set out to perform ethnographic studies among the students enrolled in the E-class. In doing so, field studies were conducted over a period of 22 months, beginning in September 2011 and ending in May 2013. The overall aim was to investigate how the experimental educational model worked from a student perspective and its impact on student learning processes and outcome. The design uses classic long-term fieldwork as described by Borgnakke (1996ab; 2013b) - mixed with video diaries and digital letters[45]. As a whole, using blended methodology would reflect the field and give voice to the students in different learning contexts, e.g., classroom, clinical practice, campus and learning spaces created by each student in their own contexts. In this sense, the ethnographic framework is 'a mix of methods and voices and will be blended to the same degree as the field of practice' (Borgnakke 2013a). The decision to mix classic fieldwork and video diaries was made in expectation that the latter would add data not otherwise obtainable to the study by serving as a media which follows the student, not the researcher. Or in other words: fieldwork was no longer restricted by the time and space in which the researcher naturally could observe and interview the student, but also presented the student with a chance to define what to disclose to the researcher – and when and where to do it.

Heath et al (2009) states that in general visual methods have the potential to give young people more control over the data generation process - and a chance to express themselves in media with which they feel comfortable. Heath et al have even coined the phrase 'age-appropriate methods'. No doubt that the current generation of nursing students are used to present themselves in social media, as they have been brought up with FaceBook, Twitter, reality TV and programmes like X-Factor and Big Brother (Duggan and Brenner 2013; Noyes 2004; Dahl and Kjær Nielsen 2009). Thus, the idea of making public their personal statements, photos or videos is not unknown as a form of communication for this generation. So with the intention of giving nursing students a voice of their own in this study, video diaries were included, expecting that this would give the participants a unique opportunity to represent themselves in time and space by 'self-filming' (Murray 2009) in a media well-suited and well-known for the nursing students.

The following part of this paper will zoom in on and reflect upon the use of video diaries, the potentials and challenges as well as ethical dilemmas of using video diaries.

[44] The full course material and evaluations (in Danish) for each year can be found on: http://www.viauc.dk/E-klasse

[45] The Digital Letters is a part of the PhD Project, and a co-joint project by Røn Noer & Borgnakke, 2013, but will not be further elaborated in this paper.

3. Using video diaries researching student life

In the spring of 2012, four of the then 27[46] E-class students were invited to participate in the study as key informants, tasked with the production of video diaries. The video diaries are defined as 'series of video recordings (in this case on iPads) made by the informants over an extended period of time and used for collecting data on their lives through this specific period of time'. All four key informants were female students. They were chosen, not because of their gender, age or grades, but because as a group they represented four different clinical placements and because of their storytelling skills. In this sense, the sampling of key informants was based on 'observer-identified categories' and was linked closely to the strategy for data collection (Hammersley and Atkinson 2007, p.37-38). The number of key informants reflects how many students the researcher was able to observe in the clinical settings during the time left until graduation. Prior to the start of the video diaries production, the researcher met with the four students to introduce them to the concept of making video diaries. They were given an iPad2 and very short instructions in recording and uploading videos to an account shared between each student and the researcher. Time was allocated to get familiar with the iPad and practice recording a diary and sharing the videos. iPads were chosen instead of a handheld camera because they are easy to use and have Apps and features which make both recording and sharing the videos easy.

Three different modes of video diaries were used (unstructured, co-directed and theme-based). The initial videos were unstructured in the sense that participants could freely select location, style and wording of the video. Only the timespan for the date of recording was chosen by the researcher and agreed upon in advance. Co-directed videos were made when during the study some of the key informants travelled worldwide as part of their education, in areas where it could have been dangerous to flash the iPad. The participants and the researcher met in advance and made a joint decision not to cover this part of the education with continuous video diaries. Instead, we decided that they would make individual video diaries if possible at their individual placements, and in addition, they agreed to make a total of three videos prior to and after their studies outside campus. The group formulated the questions to guide these videos, and questions were later sent by email to the participants. This means that the video diaries were co-directed by the group as a whole. Finally the study used what is termed 'theme-based video diaries'. These diaries all have a theme, e.g. *'Important relations and interactions during my nursing education'*. The themes were defined by the researcher and argued to be relevant to the researcher's observations and interviews in the field. As such, the theme-based videos were a result of the mixed methodology combining classic fieldwork and video diaries. In all three types of video diaries the key informants were not probed or directed by the researcher. The length of the story told defined the length of the video diary. Since the time span of the video diaries covers the students' last 12 months before graduation and their first months as graduates, the video diaries cover life both as a student and a nurse, in school and at work, and the stories told by the individual in these settings.

As the key informants began making their video diaries, three main things became evident:

First of all, the students were really comfortable with the process of making video diaries in the sense that the videos they produced showed their home environment,

[46] 36 students started in September 2009, 22 graduated in January 2013, 1 few months later.

relaxed in PJs, sometimes crying, sometimes with their roommates, on their way to a party or looking tired after a long day at work. Almost none of the videos give an impression of being instructed and/or rehearsed. Only a few times students commented on the way they saw themselves in the videos. An example of a comment could be the student that sent a very short follow-up video, just commenting on her look, saying: "*My breast does NOT look like that in real life*" (VD-S3, March, 2012).

Secondly, they began to use the iPad to make spontaneous video diaries - often starting with a phrase like: "*Hey V, I simply have to tell you this.....*", and videos revealing their vulnerability and need to talk about their experiences. The video diary became a partner they could confide in. Barnes, Taylor-Brown & Weiner describes how in a project with HIV-positive mothers videotapes turned out to be an empowering medium, offering the mothers an opportunity to reproduce and understand their own world (Barnes, Taylor-Brown, and Weiner 1997). Similarly, the video diaries in this study could be seen as an empowering medium for the students and offer them a chance not only to tell their story, but also to reflect upon their lives as nursing students and nurses as they progress. An example of this is the student who reflects on her learning process like this: *" [...] it irritates me that I always focus on what I can't do or on my failures. I need to be better at focusing on what I do right, during my education, as well as when I become a nurse. It's a learning process, so I'm sure I'll learn how to. I need to believe more in ME."* (VD-S2, March 2012).

Third, the use of video diaries in combination with observations and interviews reshaped the relationship between the researcher and the students to more than a relationship based on being together in real time and space. This is evident from the ways in which the students address the researcher when making their video diaries and from the researcher's interaction with the students, both online and offline. An example of this is the student that ends her video diary by waving her hand, saying *"Bye, bye V - see you tomorrow"*, and the researcher waves back and says *"See you tomorrow"* - although she knows very well that nobody sees her. Or the researcher reaching out to touch the student's face when she's crying. The point is that the video diaries have a reshaping or maybe even a transformative effect on the relationship between storyteller and researcher when videos are recorded or seen. It is not face-to-face in the same room or online at the same time, but despite the physical separation, there was a great sense of presence. Hammersley (Hammersley 2006) asks a relevant question: "*Does ethnography depend upon the physical presence of the ethnographer in the midst of the people being studied? Or does the assumption that an ethnographer must be physically present involve an outdated conception of what is required for ethnographic work?*" (Hammersley 2006, p. 8). I will argue that the presence of the researcher can take on many forms, not only face-to-face at the same time in the same location. The use of video diaries is an example of this.

4. Up close & personal

As a data-generating method, the iPad video diary is very sensitive to the personal perspective. First and foremost, because each participant chooses what to say and where and when to tell their stories. As stated by Cashmore, Green and Scott (Cashmore et al. 2010), video diaries can capture various emotions, experiences and insights that students 'are feeling at a particular moment in a particular personal and social space'. In this study, it clearly became an invitation into the students' private

physical spaces; in this way, the researcher got a glimpse of their homes, their roommates, their parents' houses etc. In a study, where disposable cameras were handed to the respondents, it is described that this gave access to more private spaces and glimpses of experience that were not shared with the researcher in interviews (Heath and Cleaver 2004). In the present study, the video diaries also gave the researcher access to data not obtainable during classroom or clinical setting observation or told during the interviews. Examples of this could be Laura showing the researcher the view from her room or lying in her running outfit, just arrived home from training, Asta telling and showing that she is at her parents' house studying for the upcoming exam, or Asta, Julie and Laura showing what their workspaces look like during the process of writing their final papers before graduation. Data that all together give a more complete account of the key informants' personalities - as nursing students and as nurses - their learning spaces and learning strategies and how they want to portray themselves in the study. The choice to provide a way for informants to control what to tell and where and when to tell it made them storytellers of their own educational trajectory. Portraits that in some cases take the shape of a mix of a confession and a complaint, clearly not intended to be spoken out loud in formal learning settings, but nonetheless important for the storytellers and their educational trajectory.

In previous studies, it is described how the camera almost takes the place of the researcher giving it the role of a conversation partner (Buchwald, Schantz-Laursen, and Delmar 2009) or that the camera can be seen as a sympathetic, sensitive friend, an attentive ear to turn to for a talk about feelings (Moinian 2006). Similar results are seen in this study as the students often address their communication directly to the researcher, e.g. : *"I'm so embarrassed, Vibeke, that you had to witness this today"* (VD-S2, April 2012), or *"It was really nice to see them - I miss them, because we've been apart for a long time, and as you know, I don't get along that well with fellow students at the ward, so I was beginning to feel alone"* (VD-S1, April, 2012), or in cases where the students state that they are unsure if what they are about to tell is of interest to the researcher, but they will say it anyway. As one student said: *"I just needed to get it out of my system"* (VD-S3, April 2012). It is also evident that many of the videos are displaying the storytellers' feelings about different experiences, i.e. the first time they see a dead patient: *"[...] I felt incredibly humble in the situation. It made an impact on me - and I felt glad that I could contribute to making the situation as dignified as possible [...]."* (VD-S2, April 2012). Or a student displaying her feelings of being in a group where ambitions and time spent on the project differ widely. *"It's Wednesday night, I'm in tears, and I'm frustrated, angry and furious"* (VD-S4, June 2012).

Altogether, the impression is that the storytellers feel comfortable making video diaries on the iPad and sharing them with the researcher. They appear very authentic and trustworthy in the videos, and they portray themselves both as strong individuals and good students, but they also show their insecurity and their doubts about their choice of education and their own performances, both as students and graduated nurses. One storyteller puts it this way: *"Hey Vibeke, just wanted to send you a video [...] I feel sad, I'm tired, and just feel like giving it all up. I didn't expect to have these thoughts at this time. Deep inside, I know that in time I will feel good about it, and appreciate how amazing it (the job) is. [...] But right now, it's tough"* (VD- S4, April 2013). An open invitation to join in their stories - and as a researcher you get a first hand impression first of their experiences of life as a nursing student in the E-Class and later of their experiences of life as new, working nurses.

5. Taking the stories 'front-stage'

Before zooming in on the ethical strategies and reflections on the use of video diaries, let us go 'front-stage' for a moment - close to the stories depicted in the first preliminary analyses of the video diaries. So far, the data set consists of 139 video diaries (from 30 seconds to 24 minutes). TransAna is used to manage the video diaries, to transcribe and to write memos and tags.

The stories told in the video diaries are the stories of four young women on their way to becoming nurses. The stories are very personal, and the researcher is entrusted with data not only on learning strategies and outcome, but also with data on life in general when taking a bachelor degree in nursing. Starting the fieldwork, the researcher expected the experimental educational model and the inherent principles ('practice-before-theory' and 'the recurrent pedagogical concept') to be important themes, and that issues related to 'bridging the gap' would be central. But as the video diaries progressed both in amount and in real time, it was clear that the 'front-stage stories' were stories of formation, important relationships, and assessment and evaluation. Further analyses will enhance understanding of the concepts at stake; only the first preliminary empirical results are presented below.

6. Questions of life and death [...] on an ordinary Tuesday - Stories of formation

A study conducted by Benner et al reported that often formation stories are a major singular theme in the narratives of nursing students, but also woven into many of the other stories told (Benner et al. 2010). Stories of formation are also central in this ongoing study and are told as stories on becoming increasingly independent, on the risk of taking on responsibility too soon, on the fear of making mistakes, on taking control, growing up and at the same time developing oneself into a professional nurse, on the choice of a path in life and on being vulnerable and touched by the patients and their relatives. The stories of formation are good examples on how private life and life as a nursing student become intertwined. An example:

> "I've learned something about caring for the patient's relatives when they are suffering. For example when answering the phone - you feel so insecure and vulnerable. You really don't know what will be the right thing to say or do. I don't have that much experience, and there's no time to think of any theory that might help you - you just go and act upon your feelings. In cases like that you learn to push yourself forward. Being in situations where you don't know how the situation will end extends your boundaries because what I end up doing or saying is of great importance to the other person - and that affects you. You are constantly reminded of what's at stake - and by that I mean that an ordinary day in the clinic is filled with emotions, the emotions of the relatives and your own emotions. Questions of life and death become relevant, on an ordinary Tuesday - and as a nursing student you have to be able to handle this - otherwise it's too hard! [...] It sometimes seems crazy when you're at home, to think about what happened at work that day. Sometimes it seems like fiction - it's so different from your own life [....] you get this feeling of separate, parallel worlds" (VD-S1, March, 2012)

7. It's a flashback to elementary school - stories of important relationships and of evaluation

Stories of important relationships were major themes for the key informants. The stories are told as stories of 'the others' and the importance of a person or persons. It is stories of lecturers and clinical instructors that enabled the students to move forward by being role models in the sense that they had a passion for the profession. And it is also stories on the importance of good friends, understanding boyfriends, and supporting parents. But more than anything it is stories of fellow students and why it matters who they are, their ambitions, and how they perform.

"I knew it. Of course it had to be me. I'm just so frustrated, because I actually looked forward to being back at school and doing this assignment. But they punish me by deciding with whom I have to write this paper. It's a flashback to elementary school – back then it was always me and the boys who didn't do shit [..] I just cried when I came home today" (VD-S1, April, 2012).

Stories about school life are mixed both with flashbacks and with evaluation. Student performance is constantly assessed, and the stories told reflect this. They are stories on how to prepare for the next exam, how to handle stress in relation to an evaluation and how to cope with being continuously evaluated. It is the hope for good grades; it is pressure, stress - and the victory and the joy that follow.

"I hope to study tomorrow, but I'm really not very motivated these days. A week ago I felt nervous about the upcoming exam, I felt it in my stomach. But I just find it hard to motivate myself. I'm so exhausted when I arrive home after a day at the hospital, I just can't - and also I really don't know what to read"(VD- S4, April 2012).

They are all stories of being an E-class student, and they capture focal practices in nursing education as it was experienced by students in the class based on an 'experimental educational model'. The stories above were some of the 'front-stage' stories. Further analyses of the video diaries and the data generated from the fieldwork will also go 'back-stage' and enhance the understanding of life as an E-class student by zooming in on important themes depicted and told by the students. One important empirical finding does, however, stand out so far: the educational trajectory is not only formed by curricula, the educational model chosen or educational settings. It is also formed and influenced by fellow students, teachers, instructors, patients and their relatives, family and friends and the history of the individual educational trajectories going back to elementary school. In that sense, it is truly a story of formation and that of becoming a nurse.

8. Ethical strategies and reflections upon the use of video diaries

As in any research, ethical implications should underpin ethnographic research (Hammersley and Atkinson 2007; Pink 2007), and Rose (Rose 2012) states that for researchers using visual methods, reflexivity is a prerequisite for ethical research. According to Rose, this means "a constant, careful and consistent awareness of what the researcher is doing, why, and with what possible consequences in terms of power relations between researcher and researched." (Rose 2012, p. 341).

My first official meeting with the four students who later became the key informants of 'the story of the E-Class' took place in August 2011. I was assigned to the E-class as a Senior Lecturer and was about to become their lecturer for the

following semester. In my first six months with the E-class, I was their lecturer, but at the same time they knew that I was also about to launch an ethnographic study on the educational model behind the E-class. That is why the key informants were not included until 12 months prior to graduation. At that time I had graded their performances for the last time - and there were no evaluative relationship between the class and me. This was my first ethical strategy doing video diaries. It was important that they knew I did not have the power to grade them depending on their acceptance or non-acceptance to become key informants.

In the following paragraphs, I will further outline the ethical reflexivity regarding the use of video diaries according to what for analytical reasons I call: Research-based relations and public representation.

9. Research-based relations

It was evident that ethical concerns turned up as soon as I started testing the form and the method of collecting data using video diaries. First and foremost, questions of expectations became relevant. Did they expect me to respond to the videos by email or comment on the video the next time I saw them? Did they expect me to act upon their worries or joys? These questions became crucial, due to the design of the study using blended methodology, which meant that the researcher and the key informants met face to face on a regular basis throughout the project, i.e. when the researcher made field observations in the classroom or in clinical settings. To my surprise the key informants confirmed that they were happy to just upload the videos - they did not expect me to react upon them on an individual and regular basis. We agreed on this, but in real life it was not that easy. An example of this:

When I did field observations in clinical settings following the students at their clinical placements, the students did a video diary each day of the week I was at their unit. One week I follow Julie. I was very surprised by the work environment. The tone was harsh, and I observed situations in which Julie was either left alone with semi-critical patients or left with a nurse that clearly did not want to help Julie. One evening Julie uploaded a video where she described how miserable and alone she felt. I was going back to the unit the next day, and I was wondering what to do. In my field notes I wrote:

"Evening, XX.XX.2012.

[...] I can't change the situation for her, but obviously I can't just pretend nothing happened - or deny that I've seen the video. I have to show that I'm a researcher, but of course I'm also a human being, and I saw and felt her frustrations. I did see her, and I did hear her. (Field notes, Julie, XX.XX. 2012)

"The following day, YY.XX.2012.

I'm on my way to the hospital, the same route as yesterday, I have warm coffee in my jar, and this is my second day with Julie. Fully dressed in nursing uniform, I go to the nursing station where I meet Julie. I start by saying 'Hi Julie', put my hand on her shoulder, and tell her that I've seen the video diary. Julie looks at me, and she starts crying. I take her hand and tell her that we should go into another room, which we do. My immediate thought was that Julie shouldn't let the whole group of nurses see her in this vulnerable position. In only a few minutes they start to come into the office. The dayshift is about to begin. Julie's still crying. I respond: Julie, I agree, but as we talked about earlier it's not in my hands to help you here as a lecturer, but I will tell you that I

had similar thoughts when I left the hospital yesterday. If this continues you can either contact your lecturer at the school or the student advisor. My last words to Julie were: Don't let them do this to you - you're a good girl, hold on to that thought. Julie sweeps away the tears,and we go back to the nursing station." (Field notes, Julie, YY.XX. 2012)

Clearly, as the researcher I felt an ethical dilemma in the sense that I wanted to help Julie, as I knew would be proper if I had still been her lecturer, but at the same time I had made an agreement with the four key informants that after I entered the role as a full-time researcher, they could no longer turn to me as their lecturer. In that sense I had positioned myself as a researcher, not a lecturer. As shown in the example, this position became hard to hold on to. One could argue that I stepped out of that position for a moment when I advised Julie on what to do. One could also argue that I held on to the position by letting Julie know that I could not act directly on what I saw and what I was told, and in that sense stayed in the role of the researcher. In the literature the ethical dilemmas concerning the role of the researcher is discussed in multiple ways (Hammersley and Atkinson 2007; Kristiansen 2012). Hammersley & Atkinson state that the temptation to abandon the role as a researcher should be resisted, but add that "becoming a researcher does not mean, then, that one is no longer a citizen or a person, that one's primary commitment to research must be sustained at all cost" (Hammersley and Atkinson 2007, p.229).

An ethical dilemma is characterized by the fact that there is no definitive right or wrong, so one could argue both for and against abandoning the role or resisting the urge to do so - and instead staying in the role of the researcher. Kristiansen (2012) describes how researchers may develop pragmatic principles to guide the researcher in deciding what is right, and what is wrong – and subsequently in how to act and react in the field. The principles are referred to as professional ethics of intimacy (in Danish: Professionel nærhedsetik), because it is close to the researcher and the people being researched, and in that sense in contrast to a general, distant and abstract ethical code. Hviid Jacobsen and Kristiansen present the following concepts to describe the 'professional ethics of intimacy'. First, it must be situated and contextual. Second, it must insist on ethical reflections as an integrated and independent part of the fieldwork as a whole, not just a disintegrated appendix of subsequent ethical rationalizations. And finally, it must be based on a common-sense understanding of what constitutes a decent interaction with people in general, and it has to be characterized by empathy, trying to see it from the perspective of the researched, and evaluative regarding the possible consequences of the research (Hviid Jacobsen and Kristiansen 2001).

Using video diaries as one of multiple methods of data collection, I argue that ethical dilemmas are inevitable and cannot *all* be accounted for upfront - they must be dealt with when occurring and "cannot be concluded until the researcher is actually in the field" (Pink 2007 p. 49), In doing so, the researcher may be guided by ethic codes, but also, and maybe even more important, by principles of empathy and common sense both contextualized and situated in the ongoing fieldwork. To conclude, ethical dilemmas will arise as soon as you enter the field. How you as a researcher handle these will depend on your knowledge of the field in which you are engaged and your ability to make decisions on what to do, and how to act or react.

10. Public representation

The concepts of anonymity and confidentiality are often considered central to educational research, but working with visual data, e.g. video diaries, anonymity and confidentiality are challenged. Wiles, Clark and Prosser even argue that it may be impossible and impractical to ensure anonymity and confidentiality when data are visual (Wiles, Clark, and Prosser 2011). In this study, the problems of anonymity were raised from the day I gave the four students the iPads. No one else in class had an iPad, and for that reason alone it was impossible to conceal the identities of the key informants, as everyone involved at the site and the organization knew that as part of the study I collected data through iPad video diaries. I could only help the informants protect themselves from the risk that others gained access to their videos by instructing them in the activation of passwords etc. on their iPads. To tell them that they would remain anonymous in the organization would not be correct, since a lot of people would link them to the E-class project due to the fact that they showed themselves in the class and in the clinical practice with the iPad. According to Walford, anonymity is still a common option in ethnographic research, but it may not be the most desirable choice (Walford 2008). The choice in this study was to use video diaries as a data collection method, even though it could possibly compromise the concept of anonymity, but at the same time make the choice visible for the informants and ensure that they knew this to be a possible outcome. In that sense, the informants were promised anonymity to the extent possible, considering that the ethnography took place in an organization involving many people at different levels and in different positions for a long period of time.

Doing visual ethnography also raises questions of how the visual material is used and represented. At my first meeting with the four students, we discussed how and for what reasons their videos would be used. The use of video diaries was primarily a method to collect data not otherwise obtainable in the classroom or in clinical practice, but also a way of giving the students a voice of their own in the study. The students signed a consent form, stating that the video diaries were not to be used at campus before their graduation, and if used at conferences or in other public presentations, they would get a pre-release view, enabling them to decide whether the researcher could use it in public in the given form. The choice not to show any parts or any quotes from the video diaries on campus before graduation was solely based on the fact that no matter how faces or voices were blurred, it would be almost impossible to preserve the anonymity of the student. The students would at this point still be subject to evaluations and examinations, so the choice was made to protect both the students and the evaluators. Pink (Pink 2007) states that questions of harm to individuals or institutions become pressing when it comes to the publication of, e.g., videos. The first videos presented publicly showed the students with a black box covering their faces in order to ensure their anonymity. It could be argued that this does indeed ensure anonymity, but it also compromises voices and disempowers the students in the study (Rose 2012; Holliday 2004). On campus I met with one of the key informants, and showed her the video diary before it was used in public, and her only comment was: *"You really don't need to cover up my face"*. I agree that blurring faces could disempower the voices of the students, and I would like to add that this also puts the data at risk of losing its power as personal stories of formation. The point is: compelling stories not only empower the student voices but also the findings in the ethnography as a whole.

11. Zooming in - voices of the chosen ones?

In summary, video diaries give the researcher a chance to zoom in on the personal story of being an E-class student, and they have the potential to give a personal and subjective story, given that the video diaries follow the students' educational trajectory in real time and in contexts and spatial structures defined by the student. Boyd states: *"We do ourselves a disservice if we bound our fieldwork by spatial structures - physical or digital - when people move seamlessly between these spaces"* (Boyd 2008, p. 53). I agree - we should move with them - and will add that the video diaries offer a chance to do so. By handing out iPads to the key informants, they were offered a voice of their own. A voice not probed or directed by the researcher, but the voice of the subject. The form of the media was given, but one could say that the choice of lens focus was given to the storyteller with no chance for the researcher to interfere with the storytelling - the risk being no focus of interest for the research questions at stake, the gains being data not obtainable in classic fieldwork. In this study, this added a very important empirical analytical point, stating that on the way to becoming highly skilled and compassionate nurses, not only formal courses and classes in the formal settings count. Fellow students, teachers, clinical instructors, patients, family and friends also play an important part.

One could ask if it is possible to zoom in on the voices of the chosen ones and still remain true to the story of the E-class as an entire unit? As the storytellers are in fact E-class members, their stories will be founded in the E-class, but they are, of course, also individual. But given that video diaries are used in combination with classic fieldwork with interviews and observations both in classrooms and in clinical settings, the researcher is also given a chance to zoom out and look at the class as a whole, following 'an experimental educational model' at *The Department of Nursing at the Aarhus Campus*. The point is that video diaries may, of course, be regarded as giving voice to the chosen ones, but the method also contributes to the mix of voices representing the ethnography of the E-class.

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Framing multi-sited ethnography as an approach for coping with the complexity of young people's ways of learning, communicating and expressing themselves in and outside secondary schools

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Abstract. This paper discusses the epistemological and methodological implications of a research project which seeks to understand what occurs when young people observe, reflect, narrate and share how they learn to communicate and express themselves, in and outside secondary school. We undertook this task through a series of five multi-sited ethnographies that move through school, home and virtual environments. To accomplish this complex objective, the notion of multi-sited ethnography is used both as a conceptual and methodological framework. We start by discussing what it means to research young people's learning experiences from a multi-sited ethnographical approach. We then describe the role of virtual environments as tools for sharing, communicating and disseminating the research process and experiences. Finally, we confront the experience of doing multi-sited ethnographic research based on young people's ethnographical studies of their own learning practices and opening up new challenges and possibilities for educational ethnography.

Keywords. Secondary school, collaborative research, learning mobilities, mobile learning, virtual ethnography

1. Researching young people's learning experiences from a multi-sited ethnographical approach

This paper is part of the research project "*Living and learning with new literacies in and outside school: contributions for reducing school drop-out, exclusion and abandonment among youth"* (Spanish Ministry of Economy and Competiveness. EDU2011-24122). This national project seeks to understand, through a series of five multi-sited ethnographies (Marcus 1995; Faizon 2009) that move through school and home (Anderson 1989: Denzin 1997; Ttroman and Waldorf, 2005), and virtual environments (Hine 2000; Hine 2005; Jhons, Shin-gling and Hall, 2004), the social life that occurs when young people observe, reflect, narrate and share how they learn to communicate and express themselves, in and outside secondary school.

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To accomplish this complex objective, the notion of multi-sited ethnography is used both as a conceptual and methodological framework. It was originally Marcus (Marcus 1995) who questioned the hegemonic conception of an ethnographic site, as a "container of a particular set of social relations, which could be studied and possibly compared with the contents of other containers elsewhere" (Faizon 2009:1), by pointing out the notion of multi-sited ethnography. Confronting a position which had been preeminent for many years in (educational) ethnography, what Marcus argues in his seminal contribution is that the study of social phenomena cannot be accounted for by focusing on a single site. At stake in this claim is not only the question of the borders of any given social practice in an interconnected world, but the fantasy of educational ethnographers, who still imagine that the limits of the field are defined by what falls under their scrutiny.

To understand youth learning experiences we need, as Faizon has mentioned, a method that "involves a spatially dispersed field through which the ethnographer moves – actually, via sojourns in two or more places, or conceptually, by means of techniques of juxtaposition of data" (Faizon 2009:2). For us, this issue is not a question of location, site or perspective, but one that recalls a greater necessity, that of recognizing the impossibility of covering the complexity of the social life of young people. For this reason when we use multi-sitedness we are not claiming an impossible holistic positionality in ethnographic educational research, but rather we seek an openness of the research imagination that doesn't avoid the difficulties of accompanying a group of young people in their learning paths in and outside schools… while they themselves make that journey through an ethnographic experience.

In our case, we understand that young people's learning experiences transit beyond school borders and move without contention through their social relations in extracurricular activities, social networks, personal hobbies, at home, and so on. Our goal, therefore, is to carry out research where the focus is on how to capture some of the consequences of the juxtapositions of all these sites. Within this perspective, when we study young people's learning experiences in and outside secondary schools, we transit, as Milne (Milne 2006) notes, through "the interplay between physical spaces and virtual spaces" (Sharpe, Beetham and De Freitas, 2010: xvii).

Like Milne, we identify in our ethnographical research formal physical spaces (classrooms and seminar rooms), physical social spaces (playgrounds), physical transition spaces (corridors), physical private spaces (students' residences), and virtual social spaces (in the case of this research: Facebook, Dropbox, Googlesite among others). What seems clear is that for any learning activity, young people "may combine or recombine various combinations of these types of spaces" (Sharpe, Beetham and De Freitas, 2010: xviii). These spaces also configure the multi-sited fields where our ethnographic research takes place. To explore them could be a possible response for coping with the complexity of young people's ways of learning, communicating and expressing themselves in and outside secondary schools.

2. The role of virtual environments as tools for sharing, communicating and disseminating the research process and experiences

In our research, looking at our use of virtual environments to store, share, exchange, analyze and communicate we observe that this set of actions could be converted into a virtual ethnography in itself. We were developing a multi-sited ethnography, which had

to cope with virtual, online environments. But even more, we were doing it in a collaborative manner with five groups of students, secondary school teachers and university researchers (Domingo, Sánchez and Sancho, 2014). In this process, to find the *right* tools to ease the communication among partners and facilitate the development of work was crucial. Therefore, the five groups dedicated a good deal of time to deciding the most suitable digital tools for them according to their preferences, accessibility and confidence.

At this point, it's interesting to point out the different position young people adopted regarding social network services such as Facebook. Some of them were very eager to use them as a way to get to know all the participants in the project and exchange more personal information. A young person from one school opened a closed group in Facebook and invited all project participants (of all ages) to join in, at an early stage of the project. However, initially there was not a large response from the young people who were not from her school. We saw that many young people were quite reserved and reticent; they did not want to use a setting they understood as strictly personal in a context they assumed as part of their school tasks (even if their participation in the project was voluntary). Furthermore, far from the increasing lack of concern young people seem to have regarding their privacy (Mallan 2009), some of them expressed a great concern about sharing personal information with anybody beyond their selected friends. Nevertheless, by the end of the process, and especially once all participants had met in the final presentation of the project at the University of Barcelona, practically all participants decided to join the closed group. Here we have evidence that we must not confuse the social networking services with real social networks.

The following is a summary of the uses of digital technologies and virtual environments that each of the five groups developed during the process of carrying out their collaborative ethnographies.

2.1. Virolai

During the ethnographic research, the most used digital resources were a website (GoogleSites) and the documents shared online. According to the young people, the use of the website enabled them to monitor the evolution of the research and carry out their project, since the website displayed a record of the work sessions in chronological order, with the significant corresponding information located in a single shared space. For example, when the young people produced the report of their project, on one of the pages of their website they placed the document's table of contents and linked the main points to documents shared online.

According to them, the shared documents facilitated the task of creating collaborative knowledge by giving all group members access to the group contributions. At the same time, the tool was efficient and reliable, allowing them to always know where the information was and that it would be updated with the latest entry. During this process of creation and analysis, according to them, they had the experience of knowledge as a social and negotiated collaboration, which evolved from a shared re-elaboration, where they mainly interacted through dialogue and questions. When they finished the project, the young people emphasised that they observed and analysed differently and that their writing skills had significantly improved

In this case, the website housed the documents in an organized manner. Having the information available and establishing a practice of sharing the writing and other

productions among the group supporting a work dynamic that led to the conclusions shared here.

2.2. Els Alfacs

This group used different online services to manage both the group and the project's process. A closed group in Facebook was created and would be used for internal formal relationships and communication among group members; this group was managed by all the participants throughout the duration of the project. In addition, members of this group also created another closed Facebook group (mentioned earlier) to encourage communication and exchange with the other four school groups involved in the project.

In addition to Facebook, GoogleDrive was used for sharing and storing documentation, such as the individual contributions as well as any work produced by the group during the work sessions. Folders were arranged not by date but by author or project. This format facilitated how the group organised the findings and the service provided great flexibility for sharing and creating files according to their needs. The young people ended up contributing textual, auditory, visual and audio-visual resources, maps and digital presentations.

The combination of digital applications this group used was understood by group members to be a key factor for the collaborative research and the learning that they gradually constructed. The folders in GoogleDrive provided a map of how the project should be developing, as folders were created based on group decisions of how the work should proceed and then were filled with material (for the most part, a few folders remained empty...). Having a folder for each participant also placed an emphasis on the accountability of each person within the group dynamic. The group did not question the use of two different environments (Facebook and GoogleDrive). Rather, the division between a communication and social platform and a site for storing and sharing material seemed like 'common sense' to the group. Finally, because this school was 180 km from Barcelona, having easy access to material and group members was very helpful for one of the researchers who commuted weekly for her fieldwork.

2.3. La Mallola

After the first meetings, the need to broaden communication and collaboration beyond the confines of the school were considered, in order to share the material produced and in order to be able to stay in touch during the week.

Initially, the researchers in this group tried to avoid using Facebook because one of the two researchers didn't have an account. Researchers proposed using email as a way of staying in touch, and an online service for sharing documents and collaborating. The young people were unaware of most online services that were proposed, although some of them remembered having used GoogleDrive (then GoogleDocs) in the school at one time. They also claimed that they never check their email and said it would be ineffective for staying in touch.

In the end they decided to create a closed group in Facebook, in order to maintain contact and share material. When this decision was taken, one of the students created it in a moment on his notebook, even though this social network was blocked by the school. Apparently the students know their way around the Firewall.

From this moment on, the main use of this social network consisted of the university researchers summarising for the group the decisions made during the

sessions and reminding the group of the work to be done during the week. Facebook was also used to share material (photos, videos, presentations...) and was sometimes used to continue a conversation started during a work session. As the presentation time approached, the occasional collaboration became accumulative. All the members of the group carried out the assigned tasks (writing texts, producing photos, videos, etc.) to create the multimedia presentation that represented their work.

The use of Facebook had mixed results. Facebook was useful as a tool for communication and helped the group organise itself. However, on entry into the group, there was no immediate way to find the shared material, and therefore its format didn't enhance the research process. Some young people had difficulty finding documents, or documents were shared and people didn't see them initially. In short, Facebook was selected as the easiest choice for a group of students that initially had low implication in the project, but the ease of use didn't ensure a high level of participation in the digital platform.

2.4. El Palau

To share the information collected and make collaboration easier, after considering different options, this group decided to create a closed group in in a social network service (Facebook). This group was basically used as a repository for storing and sharing what was produced, with occasional interventions by the university researchers in the news forum, providing reminders about the contents of some sessions, sharing documents to include or prepare changes of programme, etc.

The use, therefore, was very similar to how this network was employed by the group in La Mallola. However, they did not report having communication problems related to the platform's use.

2.5. Ribera Baixa

After analysing different options together, this group agreed on a file storage service in the cloud (Dropbox) to facilitate asynchronous collaboration and used e-mail to exchange day-to-day information, like scheduling matters, reminders, etc. This group specifically chose not to use the social network service they normally use because for the students (admittedly for some of them more than others) using those networks implicated their private and social lives, and people did not want to mix them with the research project.

E-mail was largely used to monitor the whole process. For students, teachers, and university researchers, this mode of communication allowed participants to feel that they were in touch, communicating unexpected events that resulted in work schedule changes or even to resolving misunderstandings. Also, messages turn out to be valuable sources of shared field notes.

Through the file storage service, group members were able to share and access the produced documents and information. As this tool does not allow users to edit documents simultaneously, the production of the final report involved both a commitment from the youth and the creation of work shifts to make sure changes were not erased and that everybody could add their contribution.

To summarize, in the five cases, digital resources were used for: storing the information produced during the research (notes, photographs, observations, texts, and so on...); sharing and communicating with group members; and developing

relationships and a sense of community. While participating in this process, we found that physical and virtual environments are interconnected; each type of space contributes to improving our understanding of social life in schools; and what develops within a virtual space can be narrated and analysed in the same way we approach other types of spaces.

What we find interesting (though not entirely surprising) is the assumption on behalf of the young people that we would be able to make use of virtual spaces to support our research project. Although there was variation among the youth regarding their knowledge of or fluency with different technologies as well as their interest in using them, the suggestion that we work with online services seemed logical to everyone. We also observed that most of the schools we were working in also provide an electronic platform to support learning and so in general this process seemed naturalized among the groups we encountered.

While we can observe how the use of digital technologies and Internet access is now a part of the learning process, we ask what implications that has for our research method. In their revision of so-called mobile learning, Kress and Pachler (Kress and Pachler 2007) argue that the qualifier *mobile* does not refer to the use of different digital technologies in different spaces but rather is determined by a new *habitus*:

> [T]hose who 'have' it are accustomed to immediate access to the world… The habitus has made and then left the individual constantly mobile – which does not refer, necessarily, to a physical mobility at all but to a constant expectancy, a state of contingency, of incompletion, of moving toward completion... The answer to 'who is mobile?' is therefore 'everyone who inhabits the new habitus' (p. 27. Emphasis is original).

This new *habitus* refers to a way of learning that is not based on knowledge acquisition but on knowledge construction, or the idea that individuals use and select information to create knowledge for a specific purpose (Ibid, p. 22). Market demands as well as technological innovation have helped to reposition the learner in a broader context both spatially and temporally (illustrated by terms like "ubiquitous learning" or "lifelong learning"). In our case, we can observe that online access to our materials extended the physical and temporal boundaries of our project, allowing it to take place outside of our 1-2 hour weekly sessions. Further, having a common repository where all members had the same capability to add and access information was a way to democratize our learning environment. This also corresponds to the *habitus* described above, where the digital format supported the dissemination of the responsibility throughout the group.

3. The experience of doing multi-sited ethnographic research based on young people's ethnographical studies of their own learning practices

While carrying out our collaborative research, we were able to observe young people's use of different technologies, both in and beyond the context of our project. We are interested in the role these technologies played in our research, paying attention to how they effected the development of our collaborative ethnographies and what their use reveals about the ways secondary students are learning today. However, mobile learning (or m-learning) is not itself the focus of our work. Instead, we are interested in the concept of mobility and in generating a non-site-specific understanding of learning,

one that is learner-centred rather than reflecting curricular objectives. To address this issue, we try to inquire not only into m-learning but also into learning mobilities.

Mobilities as an area of inquiry have been embraced recently within cultural geography. This concept provides an orientation for our project, which seeks to better capture the landscape of young people's learning. From a geographical perspective, the term mobilities differs from more classical notions from the field, such as migration or transportation, which also involve movement. Unlike the later terms, mobility is an emerging, interdisciplinary approach that shifts the aim of geographical research. The ontological position of mobilities insists that mobility, understood as the "entanglement of physical movement, representation and practice" (Cresswell, 2012: 160) is a starting point, an object of inquiry in and of itself.

If we dissect Cresswell's categorization, looking at movement, representation and practice, we can begin to construct a complex framework for approaching learning mobilities without reducing it exclusively to the portability of technological devices. *Movement*, in our case, is useful for considering the degree of access people have to mobility and allows us to ask when and where (and for whom) movement is available or limited. When entering the schools we observed that mobile learning (from a technological perspective) was varied. While not all young people did have smartphones they did have cell phones (mostly with WiFi connectivity), personal computers and/or notebooks and internet access at home. While m-learning is a technological reality, we observed that that doesn't mean the young people we worked with had the same type of access; not everyone can avail themselves of the wide range of digital options that exist to support learning.

The *representation* of learning mobilities invites a reflection on the discourse that surrounds technology-enhanced learning and the responsibility of an ethnographic project like ours in contributing to this conversation. Prior to beginning our fieldwork we reviewed cases (Patel-Stevens, 2005; Ito, Baumer, Bittanti, et al., 2010) that revealed the disconnection between young people's engagement at school versus their participation in extracurricular activities that require a high-level of technological expertise and overall time commitment. On one hand these studies emphasize the rich learning practices young people develop that are not directly related to their school experiences, and thus appeal to our desire to expand the discussion surrounding school success and failure (Hernández-Hernández & Padilla-Petry, 2013). On the other hand, we also question the prevalence in the literature of what we suspect as being 'exceptional cases'. Rather than create a hard binary that cast the school as a negative learning environment, we wished for our research experience to become a productive site for questioning the very notion of learning "in and outside" school. When working with the young people, the nature and relevance of this distinction (in/out) became as much a focus of our inquiry as was the documentation of learning practices.

The third dimension Cresswell (Cresswell 2012: 165) names for studying mobilities is *practice*. Reflecting on Deleuze and Guatarri's (Deleuze and Guatarri 1987) description of nomadology, he reminds us that:

> mobility is 'channelled' into acceptable conduits. Smooth space is a field without conduits or channels. Producing order and predictability is not simply a matter of fixing in space but of channelling motion - of producing correct mobilities through the designation of routes.

To address this, in schools we posited the question: what elements from "in" leave the school and what elements from "outside" go in? The young people had an easier

time explaining why school was useful outside the classroom than identifying experiences from outside that were relevant within the school. These conversations about flow and friction began to give us a different understanding of the nature of school boundaries. It appears that they are not uniformly constructed; it is easier to go out than it is to get in.

This three dimensional perspective within the study of mobilities provides a road map for researching youth learning practices. We find that our question of how to study learning in and outside school is better answered by engaging with this entanglement, as it provides a structure for thinking through the different ways we discussed learning in our five research groups. Placing the emphasis on mobility was useful when collaborating with young people because the term learning on it's own is diffuse and hard to address, while introducing strategies related to mapping or representing the transition between in and out of school was a productive starting point for our ethnographic work.

4. Opening up educational ethnography to different sites/sights

By focusing on the multi-sited and mobile aspect of learning, our ethnographic approach tries to respond to and respect the complexity of young people's ways of learning. If learning is being re-conceived as a personalised and learner-centred activity then inviting secondary students to reflect on and share how this phenomenon is experienced may help us gain a more nuanced perspective on the relationship between physical, virtual and educational mobility. Leander, Phillips and Headrick Taylor (Leander, Phillips and Headrick Taylor 2010) propose three "expansive metaphors" for "the study of learning in space–time" (p. 330): learning-in-place, learning trajectories, and learning networks. Arguing against "historically sedimented geography within education research" (Ibid), their review of learning mobilities methodologically reveals what we experienced, that learning is not a fixed phenomenon but is produced across varied contexts and within a range of social practices.

Institutional pedagogy has a narrower understanding of learning, which in a school context tends to be prescriptive and curriculum-based. Our project, therefore, disrupted young people's established relationship with school as we invited them to reflect critically on the role of learning in their lives. The research practice engaged a *mobile habitus* where the five research groups began to actively construct their own understanding of learning practices based on the evidences they were able to gather and share. Virtual environments supported this process and were particularly useful in creating a work environment that was less at risk of reproducing the more unidirectional dynamic found in a classroom. Furthermore, our use of social networks and cloud services also became evidence that speaks to the learning practices of young people.

After this fieldwork experience, we could argue that in an effort to respond with integrity to our research topic we opted for a multi-*sighted* approach to the issue. The collaborative design imbedded in our project destabilized the eye of the ethnographer and redistributed the expertise in each group among the two university researchers, the six (or more) young participants and, in some cases, with the collaborating teachers as well. Perhaps opening the investigation up to a collective is a key step for developing a mobile methodology. The group approach forced the university researchers to confront their underlying assumptions about learning while negotiating the terms of the inquiry

with the younger collaborators (themes that we wished to develop didn't always resonate with them, for example) and created a more fertile environment for exchanging ideas, observations and analyses. In this context the site was not what lay in the line of vision of a single researcher. Instead, our work focused on a layered and polyphonic representation of learning, creating a virtual field based on the mobile practices of young people.

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Second Life: a learning community. The contribution of ethnography to understand virtual worlds

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Abstract. Starting from the question "Why the virtual world Second Life despite its bad reputation is a significant place of interest?" I began my observation of this metaverse with my avatar Baby Pooley in 2009, in particular I studied the Italian community of the Pyramid Café group. During my participant observation I was able to identify the three steps by which everyone can acquire new competences they are: by doing; developping a sense of community and increasing self-knowledge. The results of my research was very interesting because I identify Second Life as a place that offers real opportunities as a developer of stimuli from the single up to everyone taking advantage of the technology to enhance learning and make it efficient and effective way. The learning shared inworld allows the birth of many prolific projects, activities and ideas that can be transferred in Real Life enriching it, both in terms of culture and skills both in economic terms. In the virtual worlds all learning strategies centered on the active new-learning such as contextualized learning, cognitive learning, cooperative learning, independent learning are applied in a completely spontaneous. For these reasons, Second Life, as virtual tool, should be considered as an useful tool and it is therefore necessary to break the wall of prejudice born around it in order to encourage a wider educational and professional use. The professional role of the "virtual teacher" is incisive and it would be appropriate to consider its position in the field of teaching strategies. Second Life as all the other virtual worlds are not perceived as potential tool for overcoming individualism staff and the success of a project shared, thanking also the common interests distributed on the various groups that ensure the rising up of the cohesion and of the collaboration.

Keywords. Second life, Pyramid Cafè, learning by doing, sharing, new-learning, virtual teacher, tool, self-knowledge.

1. Introduction

Second Life[49] is a virtual reality created in 2003 by Linden Labs, based in San Francisco, where users or residents create their own virtual personality.

Second Life is a platform known primarily as an immersive game in which you can create a virtual "second identity" and live a "second life." For this prerogative, this virtual world has also been singled out as a place of *perdition* for the easiness with which you can live experience more "libertine" (even if virtual).

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[49] To learn more about Second Life is recommended Rymaszewski M., "*Second life: the official guide*" or to go to website: www.secondlife.com

Second Life is often associated with the big flop caused by wrong marketing policies applied by a lot of big commercial companies such as 20th Century Fox, Adidas, Reebok, American Apparel, American Cancer Society, BBC, Creative Commons, Disney, Endemol, Eudoxa, Gabetti Property Solutions, IBM, Lichtenstein Creative Media, Toyota, Telecom and others that invested considerable economic resources in it.

Second Life is used for military aims too. The last case of which I am aware is from the Norwegian army, followed by the University of Oslo too, in which the soldiers improved their approach, in virtual environments, with civilians of Afghanistan.

Second life also attracts those people with a technical background who wants to experience the construction of prototypes in 3D

Yet, despite the negative reputation, the *metaverse* has continued to attract users and I asked myself: why?

To answer this question, I decided to get into Second Life and on January 20th, 2009 Baby Pooley, my avatar, born. From that day my daily participant observation begun.

When I got into SL I passed through three steps of learning:

1. Learning by DOING
2. Learning the SENSE of COMMUNITY
3. Learning YOURSELF

2. First step: learning by doing.

My first step inworld was becoming familiar with the metaverse, so I spent my first time *inworld* learning the software of Second Life. When having any kind of technical problem in Second Life I met a lot of people who helped me to solve them in a totally spontaneous way and for free.

By my choice I preferred to avoid the available mentors in the help points of Second Life instead I tried on my own, *learning by doing*, that it's the method chosen by 72,7% of the residents who independently manages to reach different degrees of skills thanks to the playful and intuitive approach of the platform.

In Second Life it's possible to sign up to a large numbers of *groups* who join residents with the same interests and organize free courses in which it's possible to train Builder, Scripter or Sculpter, designers, architects, and animation builder too.

The intuitive software platform and the playfulness paves the way to the use of external programs that can enhance the product already developed in Second Life. Basic skills include knowledge of the *build* of Second Life that can develop in various levels: low, medium and high. As basic abilities, should be included knowledge of support programs such as Blender, Photoshop, Graphic three-dimensional, two-dimensional graphics useful for textures, Inkscape and a lot of tutorial on YouTube. Scripter is next to profile the "Frontend Web Developer" identified by Iwa[50] as the builder is placed next to the "Creative Information Architect" profile.

[50] Iwa is a working group that studies about the delineation of Web skill profiles taking into account the technical standards set out by the European Committee for Standardization (CEN) in line with the objectives of the European Union.

The courses for technical expertise, including Machinima courses too, allow the abilities to shoot video or movies in a virtual environment, with a lot of interest in the field of advertising.

Then, it's possible to participate at cultural meetings such as language courses, literature, music, poetry, art, psychology, physics, chemistry, biology but also presentations of books, literary competitions, fashion shows and much more.

At the beginning of my investigation I hypothesized that the flow of professionalism went from Real Life towards Second Life especially for people who had some familiarity with the digital programs, design or 3D construction but the results obtained showed the opposite: Second Life seems to give an added value to individual skills.

Second life produces effects on skills level

- With the acquisition of new abilities
- Strengthen previous abilities
- Birth of unknown passion

And on real incomes

- Inworld
- In Real Life

Infact, thanks to Second Life, a lot of people unemployed (students or housewiwes[51]) developed skills and entry into the labor market, not only in the virtual world but also in Real, getting real incomes.

So they, in addition to a professional identity can develop an individual professional identity immersed in a social and relational context, a real horizontal [52]social organization, in which social mobility are more fluid and closer to meritocracy and able to break down Italian territorial conflicts (North vs. South).

Second Life is the place where artistic creativity or technique can meet its maximum expression and where people who already has got his own skill can leverage them effectively.

The ability to create prototypes and objects for utility in the Real is one of the characteristics that distinguishes it from most other virtual worlds (Ludlow Wallace, 2007). Second Life is also the place where you can find everything you want from a castle to the reproduction of a famous cities.

[51] Hine (2000) remembers how women in particular have been able to appropriate technology in ways meaningful which are within their lives

[52] Moreover Linden Lab, in Second Life, adopted the same innovative architecture used in the conception of their own organization that rejected the classic top-down hierarchical network favoring a "governance" horizontal model. Malaby (2009), who studied very closely the Linden Lab, explains the three reasons about the overcoming of the management model in favor of governance: the first one is that the management model applies the old conception of the business of managing top-down; the second reason is that the governance represents the right way in which Linden Lab uses the human experience in the digital realm focusing on a wide range that includes both politics and other fields; the third and final reasons considers governance the term that allows to talk about the influence of politics so that it can recognize the efforts of a balance between control and emerging resources. Governance is a very important topic that well fits into the redefinition of the boundaries of the digital age in which new technologies could reconfigure the possible actions of the people. On the other hand in the history of modern social thought are well known influences of bureaucratic institutions on human relationships, as well as the consequences, treated by Weber and Foucault, the increase in technical practices and strategies of representation with which the institutions streamline, to govern and to control (Malaby, 2009).

2.1. The Professional Job Areas

I have identified five areas shown in the following tab in which I include the jobs carried out in Second Life.

The table shows the professional areas of the works present in Second Life but it is important to specify that the virtual realization requires, in each job, as well a personal creative talent as basic technical skills.

To this list, for information, to be added some professions that we know exist in Second Life but that did not happen in our survey sample.

- Vehicle manufacturer
- Aerospace Engineer
- Creator of jewels
- XML coder
- Game developer
- Travel Guide
- Advertiser
- Bodyguard
- Private Detective
- Weaponsmith

Professional Job Areas					
Managerial	**Intellettual**	**Tecnical**	**Relational/ Comunication**	**Commercial**	**Artistic**
Manager	Teacher/tutor	Scripter	Public relation	Real estate agent land SL	Stylist
Art director	Reporter	Streaming Operator	Escort	Real estate developer RL	Gallery-sculptor-painter
Owner land		Machinima	Helper	Financial consultant	Poet
Owner disco		Cleaner	Psychologist	Touristic Promoter sl	Singer
Social provider		Builder-designer	Legal Counselor	Touristic Promoter Rl	Photographer
Content creator				Financial intermediary	Theatre actor
				Dealer	Dancer
					Model writer
					Editor
					Deejay

3. Second step: learning the "sense of community".

After my birth in Second Life I became a member of Pyramid Cafè, an important Italian group located on Solaris Experiences land, where it's possible to find the locations of a lot of activities and cultural meetings of group such as L'art d'amour, ALI, Second Life Italian mentors, Pyramid Cafè TV that advertises events in Second Life, IPAP (my group) which it's also the location of Irpps National Research Council, Wu Wei (a meditation centre), Torno Kohime foundation and Arte Libera.

The daily observation in the metaverse allowed me to point out that as well as the physical space of leisure, as cultural space, has a place in the urban area and it's possible to lace up the relationships between individuals and classes, so the virtual space has risen to the same function aggregating and socializing.

In Second Life friends spend their free time together as friends of Real Life talking in a square or sitting on a beach in front of a bonfire, dancing or listening live concerts of pop or classical music or simply seeing a movie.

Learning the sense of community means that that the founding principle is *free sharing*;

Sharing the:

- competences
- same time
- same space
- thoughts
- experiences

The effects of this free sharing are:

- Promotion the sense of community
- Reducing social distances (Peer 2 peer: it's not important who you are in Resal Life but what you share with the others)
- Reducing distances in kilometers (with programs like Skype, MSN, and other) sharing the same space
- Allowing emigrants to integrate into ancestors' culture

In fact, living in Second Life and attending the Italian Community, I met a lot of people descent of Italian who attends Italian community for approaching their ancestors' culture. Today there are many ways to interact with other people who living distant and uses Skype, MSN, etc. to communicate; but in the case of Second Life it's possible to feel integrate into a different culture in which everyone feel to belong for their origin. Today, more than yesterday, people likes to return to its roots because the globalization is in progress and that as far as unifying (Morin 2001), is conflicted in its essence.

The community of Second Life is populated by couples who get married and divorced, buy an house and decide to have a child. This may seem strange or absurd, because it's in the opinion of most of the people that the basic condition in a relationship has to satisfy all the five senses fully that can ensure its success. Yet it's not rare that romantic relationships born in the metaverse becoming happy marriages or long-lasting friendships in Real Life too.

The dynamics in the metaverse obviously reflected the sense of belonging to a group that feeds on itself consolidating it. Mayo stated that the psychological well-being of the individual depends more than any other factor by his sense of belonging to a group, in the respect that it enjoys, from the understanding that this shows him as an individual.

As I found in my observation none of people who joined Second Life for curiosity or to "play" was assumed to be able to meet new friends, to be part of a community, to meet the love or develop an unknown passion or technical expertise and above all, none of them, knew that sharing and gratuity were the founding principles of the community that promotes the "*sense of community*".

Fourastié states that to choose our own leisure means to choose our own lives even if the choice of entertainment will be placed always in second place after family obligations, professional or socio-political and will always be influenced by new cultural values (Dumazedier,1985) and that leisure is composed by games that are extensions of the collective consciousness, allowing a respite from the usual (McLuhan, 1951).

So any game, and in this case Second Life with its playfulness, conveys and determines investing them across the development of three areas: relational, professional and cognitive, encouraging the increase of the potential of the same and the start of a process to individual emancipatory inside of a real social context.

4. Third step: learning yourself

As during a sessions with a psychologist, people have to deal its most hidden part, in the same way the virtual environment can be useful to untie the knots of its frustrations, beginning from the admission of them and into an environment like a virtual world, which is not binding, without structural rigidities such as those contained in the real society may facilitate the emersion of that kind of problems.

I refer to a wide range of cases that I have encountered in my research involved in slumbering passions or simply even unknown passions, from artistic predisposition that achieving personal gratifications, economic too, to intimate desires as the cases of women happy to declare their homosexuality or men who exceed all their innate shyness with women. People get in game play without fear and, as stated Ludlow and Wallace (Wallace 2007), they are guided by the psyche of Real Life and they live their relationship with the same intensity as in any other place on the earth. It is not possible to separate an avatar from its "real-identity"[53] (Castells 2009).

In fact, for example, homophobia has not spared the virtual world but at the same time it is also true that there is also a long tradition of tolerance in the cyber world (Harris et al. 2009; Boellstorf 2010) and in Second Life there are many lands managed by gays and lesbians communities with clubs, shops and discos.

In cyberspace the worlds and relationships reside in the human mind with the only difference, in my opinion, that the malleability of virtual worlds predisposes to greater laxity in interpersonal relationships.

The virtual environment, therefore, should not be considered as an alternative to real life but as a space in which to grow, a *creatio mundi* and not a *fuga mundi* (Maldonado 1992), where achieve the expansion of the self and the principle of "be here and now", the basic principle of cyberspace, faithful to the board of living in the

[53] Sherry Turkle speaks of the 'Second Self', opposing it to 'First Self'. Castells (2009) maintains that it is not possible to separate an avatar from his "real identity" that is supposed to Second Life residents (people) can not reproduce that social dynamics of their Real Life, including those related to a personal line of shadow. This peculiarity human, then this also in the virtual world, demonstrate "the inability to create" Utopia "in the absence of legal restrictions and space" (ibid., 2009). Jurgensons For one can not separate the "real world" from the virtual world and consequently there is no distinction between "first and second self."

present suggested by humanist philosophers, it's shared in the dimension immersive too (Suler 2003).

In Second Life avatar are perfect, beautiful, young, so it's right to say that the exchange with others is mostly mental. Paul Mason (Mason 2006) a BBC journalist in an article interviewed Sara Van Gorden, a leading creator of avatars in Second Life, said that people encountered in real life was no better than those inworld because it's important their personality and not the appearance. In real life a body is a vehicle for the recognition of the mutual exchange between individuals capable of creating society (Simmel 1996) allowing the inclusion of the person in the world (Fornari 2008) and can occupy a priority position with respect to the cultural and social (Mary Douglas 1993).

The bodies of Avatar as stated Nicoletti (Nicoletti 2009) is the medium, the shape of a work written by everyone dazzled, as we are in today's society, from the splendor of perfect body.

Second Life has proved a valuable tool in many case that involved people with health problems.

In fact, many health centers, organizations and companies have found it useful to adopt Second Life as one of the strategies of Web 2.0 communication (Friedman 2007), useful for those people with physical disabilities (Boellstorf 2010) too, or for people affected by "attention deficit" that state of being perceived in the metaverse, like any other resident. Also people with schizophrenia who usually live recluse and rarely communicate, in Second Life they can live experiences that otherwise would not have been able to try (ibid. 2009).

4.1. Two Italian cases of public schools institutions involved in "virtual worlds": University of Pisa and ed-Mondo.

Second life it's considered a great educational environment as evidenced by the projects of many universities presents in it. Infact, the Italian University of Pisa, for example, with the professors Beatrice Rapisarda, Enrica Salvatori and Maria Simi, were part of an international project with the King's College of London in which they involved many students who performed design and construction of historical buildings such as the Tower of London, the Tower of Pisa and Galileo Galilei's laboratory. The experience has shown that students not only learn, being actively engaged in the construction of virtual objects working in a collaborative environment, but they made aware of the problems of communication and using that arise in relation to virtual worlds. In fact, students thanks to this project, showed to be stimulated to improve their culture and to increase their appreciation for the history and the art (Molka-Danielsen, Deutschmann 2009).

Starting from the potential of Second Life, the Italian Ministry of Education, University and Research (Miur) and the National Institute of Documentation, Innovation and Educational Research (Indire) launched a pilot project in 2009 called *ed-Mondo*, a virtual world dedicated only to teachers and students in which skills and abilities cross different fields like building in 3D, developing the organization of space, sharing, collaborating and exchanging experiences at distance, learning the building of virtual objects, doing web searches to study programming techniques, using the techniques design, recording, graphics / audio / video.

After my virtual experience in SL, I shared the will to dedicate a virtual space exclusive only for teachers and students of primary and middle schools, still

maintaining the principle of high potential offered by virtual worlds. The reasons were to eliminate the critical factors present in Second Life such as keeping kids far from places for adults only, using the same identity of teachers and pupils in real life and to maintain the commercial purposes present in Second Life far from the policy of *ed-Mondo's* as an *e-learning* platform.

5. Final consideration

Hine (Hine 2000) says: *"While ethnographers in the past or in other settings may have been able to look at bounded physical settings, when studying the Internet the concept of the field site is no longer so straightforward."*

After my observation I think that studying virtual worlds is more straightforward because in my opinion they are such as a *middle-land* between Real and Web in which boundaries, even if virtuals, are closer to real one although in this case, Second Life is considered to be more engaging by foreigners compared to other tools available on the web, so much so that many business conferences are held just inside it, unlike what happens in Italy where the component of prejudice Second Life=game hampers the use of the full potential of this platform

Ethnography applied to the virtual world of Second Life has allowed to understanding better what happens in it.

In fact only by giving "life" to my avatar and attending, observing daily and interacting with the Italian community in Second Life, I was able to understand the relational dynamics activated in it and discovering its professional world too.

Second Life offers real opportunities as a developer of stimuli from the single up to everyone taking advantage of the technology to enhance learning and make it efficient and effective way. The learning shared *inworld* allows the birth of many prolific projects, activities and ideas that can be transferred in Real Life enriching it, both in terms of culture and skills both in economic terms.

In the virtual worlds all learning strategies centred on the active *new-learning* such as contextualized learning, cognitive learning, cooperative learning, independent learning are applied in a completely spontaneous.

For these reasons, Second Life, as virtual tool, should be considered as an useful tool and it is therefore necessary to break the wall of prejudice born around it in order to encourage a wider educational and professional use.

The professional role of the "*virtual teacher"* is incisive and it would be appropriate to consider its position in the field of teaching strategies.

Second Life as all the other virtual worlds are not perceived as potential tool for overcoming individualism staff and the success of a project shared, thanking also the common interests distributed on the various groups that ensure the rising up of the cohesion and of the collaboration.

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Themes of interest in (for) a digital (ethnography) environment

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Abstract. This paper is part of the development of a doctoral thesis in the program Education and Society of the Universidad de Barcelona in Spain. The reflection is titled: "Rural schools projects: PC and Tablet generation's concerns and achievements". The intention was to understand how primary schools are starting to involve today's available technologies in teaching, and students in studding, and how important is to understand from an educational perspective what they are doing in a digital environment. An educational point of view to understand how these technologies are affecting the class dynamic and learning process is fundamental to understand the importance of the research in a digital ethnographic environment.

Keywords. Pedagogy, digital ethnography, educational community, Virtual environment

1. Introduction

With time technology has found its way into the deepest factions of our life, this includes our educational environments. Being such an important part of today's working and social environments it is just fair, and to some extent necessary, to blend it in with our growth as a student and researcher.

2. The intention of this paper

The intention was to understand how primary schools are starting to involve today's available technologies in teaching, and students in studding. But most importantly how these technologies are affecting the class dynamic and learning process.

The original doctoral research project is concerned with *"Rural schools in a digital environment. Case study Colombia"*. Part of the methodology involved visiting rural schools in some European countries to build an informed approach with: Students, teachers, heads of educational institutions, parents and researchers. The ten schools visited were scattered around Spain (Ariño and Prats, three schools), England (Cheddington, one school), Italy (Campania, two schools), Denmark (Copenhaguen, one school), Finland (Támpere, two schools) and France (Ardéche, one school), and each had its own approach to technology in the learning environment.

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Can ethnography make it possible to understand the complexity of virtuality and education?

Certainly a hard question to answer, but it is from this experience that an attempt will be done to identify the key points digital ethnographers should take into account when adventuring today's educational world.

Each school presented a unique development, thinking, and application of digital tools in the learning process. From the visits six themes of interest that can help to comprehend the complexity of the issue where identified.

3. Theme 1: Understanding a new learning environment.

Technology isn't only a learning tool; it defines a whole new setting. In order to understand this situation, one must first take a look into the different components that structure this environment.

Identities are redefined, for both students and staff. The way technology is implemented involves a combination of a virtual and a physical class, and thus students and teacher may assume virtual and physical identities.

The meaning of time and space of learning is changed. As technology is implemented it opens doors to new virtual spaces in the classroom, it establishes new paths of communication between teacher and student.

Ethic issues. What kinds of sacrifices are done when implementing some technologies to the learning atmosphere? Technology doesn't actually improve learning, but it changes the conditions for learning and it changes what we need to learn. Clearly, we live in an ever-more technologically dependent world, so to be successful learners, people need to learn how to use technology and be adaptable to new innovations.

In and out (school and home). While the conventional way to take school home is through homework, technology implementations allows for a much richer interaction between the kids at home and the school.

Virtual, informal; Programming; Augmented reality. Today's children manipulate technology in an unthinkable way. A kid finding the volume of an abstract shape using an iPad is an example. The access to an augmented reality grants them different ways to understand and gather knowledge.

Cognitive system. Most of these technological tools involve sharing high amounts of media, videos, images, songs, soundtracks, and even a couple of games. All this components are actively used to mold the students learning process.

4. Theme 2: How to learn in and from a new environment

Co-creation, individual and collective intelligence. Interaction in the classroom has been redefined; kids are not only encouraged to learn through these new means, but are also guided through a collective creative process.

Multimedia use, multitasking. As said before there is a lot of media streaming in classroom, and kids are able to take in a lot when stimulated with different sensorial information. But also, devices like tablets, computers and iPads, enable them to perform several tasks at once, as though it were a natural reflect.

Evaluating a student isn't an easy task, even with modern tools available. It is still a key point in education. The schools had methods which, using technological tools, approached evaluation in a formative manner, allowing students to learn in the process.

5. Theme 3: Knowledge production

Use of web tools to produce and create knowledge and "inspire creativity". Various web tools have been developed concerning education, from web browsers such as Google, to interactive presentation editors, like Prezi. These tools enable the students and teachers to explore tons of topics in seconds, and generate countless creations with ease.

The meaning of a qualified visit to the library changes, as students gain access to a seemingly endless pit of information just by sitting in front of their laptop. It is a concern of the schools' educational system to teach them how to effectively use these tools, evaluate the sources and narrow the search into a reliable set of results.

6. Theme 4: How to enrich the teaching and learning process

Educators have several objectives when integrating technologies into the curriculum. On one side different kids respond better to different learning processes, some kids learn through visuals, others through audio, others by playing games, and others just by varying the means in which information is delivered. Technology enables schools to diversify the approach to kids with ease. But it is not all about finding the optimum way to teach kids. Making a class enjoyable and interactive leads to fruitful results. Teachers often use technological tools to make the class much more pleasant, thus engaging the kids' attention.

7. Theme 5: The rolls

With the implementation of new technologies teachers are forced to rethink the educational methods, *shifting from the teacher as the permanent center to a space out in the classroom.* The teacher's roll is that of a leader, as well as that of a team member. Class dynamic shifts depending on the activities being performed; sometimes teachers must take absolute control of the activity, guiding the students through it. Other times student and teacher work as a team while approaching a problem. This allows the instructor to accompany the student through the process and serve as a supporting agent. But it is also important for the students to explore the virtual spaces more independently, in which case the teacher serves more as a consultant.

With the implementation of the new tools students perform different roles. They create new strategies for learning; the programs implemented allow them, in many occasions, to try, make mistakes and find the correct answers.

Each kid has its own way of understanding tasks and approaching problems. The variety of tools offered allow them to choose the program they are more confident with, the tool which allows them to make the best use of their abilities. This autonomy grants the students the opportunity to improve their strengths and explore their interests.

Throughout the class, students participate in group activities, allowing them, not only to receive knowledge, but to share the knowledge they have gathered. The intuitive design of most implemented programs involves the use of senses to enhance the learning process, and allows self-development to be more accessible.

8. Theme 6: Appropriate tools

It is incredible how fast technology concerning the learning environment has been developed. Very often educators find effective ways to apply other tools (such as games) to the teaching process, thus obtaining an amazingly large amount of options to plan a class with.

It is of no surprise that each school used its own set of programs and engines with some common denominators. Power Point, Netbook, Kokems, Opit, Otava, Disney Dream Play and virtual games are just some examples.

Characteristics of digital technologies identified by the interviewees (also include observation)

Feature	Desk Top	School web page	Lap Top	Tablet	Smart Board	Mobile Phone	Applications (by area of study)
Notes / Type	X		X				
Communicate	X	X	X	X	X	X	
Coordinate	X	X	X	X		X	X
Organize	X	X					
Network(ing)	X	X	X	X	X	X	X
Interact	X	X	X	X	X	X	X
Assemble (y)				X	X		
Multitask /Multipurpose			X	X			
Portability / Movility				X		X	
Co-create	X		X	X	X	X	X
'Humanize'				X	X		

"You get inspired just by looking at the programs": teacher.

Learning is an ever going growth process, and thus it is very important for the school to help the students develop abilities which are going to be used in high school.

"They are capable of taking their own choices and defend themselves": teacher in Spain.

But in an increasingly large list of programs, it is important to note that not all the tools will give the best results. In fact the teacher's coordinator has the important role of choosing the appropriate tools. This was best appreciated in Spain, Denmark and England.

9. Conclusion

Retaking on the initial question:

"Can ethnography make it possible to understand the complexity of vitality?"

The observations of this research project lead to five concrete points. If it is intended to do ethnography in a technological-educational environment, it is necessary to:

- Understand the affordances of digital technologies and tools, know what they can achieve and in which ways they are limited.
- Study how tools are being used, each school had its own method to apply them, each proving to be very effective.
- Explore how they help to give meaning and help to focus.
- Discover what aspects emerge, and which the limitations are.
- Open the space of research to the direct participation of the tools users (and you are part of the net).

Applied ethnography in the digital world must inquire the pedagogic knowledge and which are the teaching and learning needs in an ever changing digital environment.

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