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Networks Of Users And Powers: Blackboard Software Roadmap As Cultural Practice

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NETWORKS OF USERS AND POWERS: BLACKBOARD SOFTWARE ROADMAP AS CULTURAL PRACTICE

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DEDICATION

To the memory of Jani Gëllçi, a committed educator (1932-2012).

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Figure 1-1: Issues with technology often lead to user's frustration

The intensification of the global education market through the Internet based technologies is deeply associated with a strategic discourse that apprizes these technologies as social values aiming at the commodification of education and learner. Commonly shared concepts such as the one of *user* are strategically involved in technology social indexing: while *user friendly* has become a synonym for "good" technologies, *user issues* has become an indication for the "messy" ones. Although each individual, who may have been operating those technologies for teaching or learning even shortly, knows that the issues with eLearning technologies are of multiple formats – lack of shared knowledge, skills, and coordination, human errors, system failures, power outrages, and technology updating, to name a few, – the discourse has become so popular that provides no room for questioning. However, a further exploration shows that

depending on the context, the discourse can serve the social acceptance of technology or its social denigration. The popular image on *user* as an individual in physical touch with technology, an image, which hides an institutional effort and collective work for producing a user, has become a strategic derivate of long known capitalistic glorification of technology.

In an era loosely described as globalization, the extension of the market in the American higher education paves the path for the technology involvement, interferes with learning, and provides for the learners' exploitation rather than facilitating acquisition of knowledge, a process continuously characterized by different levels of users' resistance. The rapid involvement of online education – a trend described by the neoliberals as the democratization of education, apprized for deliberating learning, and for breaking the time-space constrains to reaching learner – is an example on how the idea of market has become hegemonic in education[1]; how learning technologies are often being manipulated as mechanisms that provide for the expansion of the market ideology and practices in the field; how educational institutions, through their policies and procedures assure these transformations to reach learners, and how learners, based on their social positions into the market structures, resist the processes.

A deep observation shows that what may look like simple issues between user and technology, it materializes a quite complex and sophisticated reality that confirms the implications of the market. Despite what may appear as learners' love for or hate against technology, the involvement of eLearning technologies in higher education is profoundly

[1] Harvey (2007) and Robinson (2002)

characterized by an increase of learner' social conscience of, and resistance against market fetishism. Any misconceptions is a direct outcome of a technology glorification in public eyes, attained under the pressure of a symbolic power and discourse, which is employed and coordinated by corporate (and amplified usually by media) and which aims to strategically achieve either a rapid social acceptance, or a social decay, of certain technologies. *User issues* are, then, zoomed in and out in a political manner, obscuring, and even hiding the real issues in education, sometimes innocently and another time on purpose.

This study takes a unique approach: it problematizes Blackboard users. Specifically, it focuses on the processes that help transforming a learner into a Blackboard user, or even non-user. This vision highlights the importance of a deep understanding of technology itself. Blackboard is a software under the umbrella of Learning Management Systems (LMSs) known to involve the Internet for teaching and learning by creating virtual environments and provide for multiple user communication. As a complex educational platform, Blackboard became quite popular in higher education, yet controversial for prioritizing the market as a leading philosophy in technological changes versus learners and learning. While educational institutions, as part of the networking that domesticates those technologies, have acted accordingly, the impact of the market philosophy and practices have been deeply felt by university learners and others, who have resisted to become Blackboard users and whose resistance keeps transforming Blackboard.

The study asks: How do university learners become Blackboard users and how user's resistance shapes the software and the related social outcomes. It aims to examine in context how, generally speaking, the idea of educational technologies took place in education; how the use of those technologies took place in the system of the social values through an accordance of work, ideas, and effort among corporate, educational institutions, and the American government; how Blackboard software flourished and was transformed into a proprietary product to fit the market dynamics; how the developments within the social, political, technological, and cultural context shapes software transformation and its social reputation in both macro and micro levels; and what does that mean for learners, learning, and the society.

Focusing on the learners transformation through the developments of eLearning technologies for an explanation of the market effects on learners' lives was not an easy task mainly because of a glorified popular image given to technology in our capitalistic society that continuously equates technology with social progress and as a fulfilling of human needs; a social attitude amplified in the case of the Internet technologies. The studies under Science, Technology, and Society (STS) have already detected the social issues with a technology fetishism, have approached the idea of user in – Pfaffenberger (1998a, 1998b, 1992a, 1992b), Hughes (1986, 1989, 2004), Woolgar (1991,1993,2002), Latour (1985, 1997, 2003), Pinch(1984,1986) , Bijker (1989, 2993, 1994, 2002), Callon (1987), Law 1989, 2000), Oudshoorn (2003, 2004) – and offer a variety of methods and tools for a deep understanding of what stands beyond technology developments, the

distinguished role of human actors in those developments, and with no neglect for non-human actors.

The study takes this approach a step further by specifically focusing on the technology developments in the field of education, a field projected by corporate as an area for market extension (Harvey 2005, Robinson 2002). The market issues pertaining to the education are widely discussed by a group of authors and academics from the field of education – Apple (2005), Burbules (1999, 2000), Torres (2000), and Monahan (2005) – who link the developments of educational technologies to a corporate strategy that aims at the commodification of learner. However, regardless of a critical approach that those studies take by considering eLearning technologies as mechanisms for market extension and learner commodification in the field of education, there is little explanation offered on how the technological mechanism works in that purpose. It is not rare to see that technology and user are seen as two separated entities. Therefore, no significant explanations are offered on the learner-technology transformations in the processes of operating learning technologies, on the role of educational institutions in those transformations, and on a learner's resistance against market fetishism – all found crucial here.

Statement of the Problem

The rapid involvement of LMSs in education – Internet applications usually described as *simple tools* and *user friendly* – has been associated with documented malfunctions and learner's misunderstanding that speak for a cultural discordance in the

process of technology domestication. The so-described *user issue*s within LMS are long described as systemic issues of the large technological systems by Hughes (1989). However, those issues are minimized or exaggerated purposely, usually in relevance of the market developments. Since early in the last century, the field of education has been anticipated as profitable by corporate. Regardless of any social benevolence and pride of engineers for their work in benefit of human society, as a rule, technology developments are deeply intertwined with social and political intentions of certain groups in society. It is quite often that technology developments have been manipulated to serve a profit purpose.

While eLearning technologies go along with this line, a meticulously examination discovers a complicated and complex process, during which corporate, in agreement with some elite educational institutions and the American government, have been long working closely for building a culture of technology use or the culture that glorifies technology by treating it as a social value. The monetary and materialistic resources offered by corporate, a legislation sanctioned by the government, along with adequate infrastructure, procedures, and rules employed by educational institutions point out that most of all, the implementation, and the use, of eLearning technologies in the field of education were culturally enforced to fit the market game. Through symbolic power and discourse, those processes were socially and culturally constructed to accommodate learners assumedly to technology. In reality, measuring the success of a technology by the number of its users or by users' issues is indication of an attempt that aims at learner's commodification through technology. The identification and the study of those

cultural forms provide for a further understanding of the effects of market fetishism in education.

Purpose of the Study

The purpose of the study is to show how commodification is at work in the global education market.

It aims to:

- Explore, analyze, and discuss the meanings associated with the market fetishism in education and the symbolic power given to the Internet technologies
- Explore and describe the forms of networking powers in the American higher education
- Identify and highlight the cultural construction of Blackboard as a proprietary software
- Explore and describe Blackboard implementation, troubleshooting, and updating at a university setting; identify and discuss the institutional and collective effort in producing Blackboard user
- Identify, describe, and discuss learners' resistance against the market philosophy and practices.

Significance of the Study

This study remains unique in its approach: It takes a critical perspective on the expansion of the market in the social domain of education. As a response to the inquiry of

a group educators in academia that seek to identify the forms of that extension in the field of education and recognize eLearning technologies as one of the links between the market and the commodification of learner, the study considers the market-technology-learner locus with a focus on the learner's transformation in the context of Blackboard development. It documents how the market philosophy and practices expanding in the field of education project learner commodification by promoting a culture that views technology use as a social value; how Blackboard LMS became a market signification; and how users construct their resistance against the interferences of market in the process of learning.

By focusing on Blackboard LMS from a user's perspective, this study is inspired by the STS work on the social consequences of technological developments. By problematizing Blackboard user, the study goes a step further and deliberates technology from the known slogan of "the social consequences of technology and how users affect technology in return", a saying that has never been in full compliance with the definition of technology as a "human affair" and "political means". In addition, the study remains significantly different from similar studies in education that often take *technology* and *user* as two given and separated entities. The identification and interpretation of *user issues* in a larger context helps with the discovery of the social roots of those issues and their interpretation in the context of globalization.

Scope of the Study

This study takes a users' perspective on the developments of what has been known as Blackboard software in both a macro and micro context. *Macro context* generalizes the political, social, technological, and cultural environment that provides for the culture of use and the infrastructure of the educational technologies within the American higher education. *Micro context* localizes the struggle, resistance, and results of the environment developments in a particular area. Specifically, for this study, the micro context symbolizes the institutional effort and team work for the implementation, testing, and troubleshooting Blackboard software in a local university that will be recognized here simply as the University.

User Issues – an Introduction

A deeper insight into what is described as *user issues* became the first step on problematizing user. Generally speaking, Blackboard is an LMS software in a category that focuses on the administration, documentation, tracking, reporting, and delivery of Internet educational courses. Specifically, those technologies create virtual environments suitable for teaching and learning online. What is commonly known as online education is found suitable especially in higher education, where online courses seem to fit the lifestyle of many. In regard to LMSs, which are often described as "simple tools" and "user-friendly," different studies and experiences have shown that the related issues exceed the systemic discordances and appear in a large array.

Promises vs. Reality

Blackboard Inc. is considered one of the pioneers in the field of education software development. Blackboard software remains in the center of a multimillion-dollar industry, yet it is a controversial technology. The company's official website states that Blackboard will "make teaching more effective, and learning more exciting – in and beyond traditional walls"[2]. Related evidence, however, offers conflicting data. Even though it is reported that Blackboard counts more than 11 million *end-users*, the latest statistics shows that similar LMS software have been successfully promoted in the market and that many universities have been dropping Blackboard for another software. Additionally, a survey of 730 faculty, staff, and students in the University of Wisconsin concluded that "Blackboard is hard to learn[3]." Another similar study[4] confirms that Blackboard is considered "difficult to work with" especially by non-traditional students. Websites of academic professionals and students also testify that the operation of Blackboard LMS is not as easy as it states[5].

Technology Projects and Human Beliefs

What may look as technological issues however, exceeds technology itself. Regardless of their ages, higher education attracts millions of Americans, who believe that good education can lead to what is described as an American dream. That collective belief

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[2] Retrieved from the official website of Blackboard Inc. on 06/26/2013 http://www.blackboard.com/About-Bb/Who-We-Are/Platforms-and-Services.aspx

[3] For more information on the study see Bradford at al. The Blackboard Learning System. http://uupinfo.org/research/working/bradford.pdf Retrieved on 12/12/2013

[4] See Bradford.

[5] There are a number of online discussions on websites such as www.eliterate.com www.chronicle.com, www.Ihateblackboard.com

justifies billions of taxpayers' money spent in promoting recently the so-called new technologies in education. Interestingly, there is a discrepancy between the fact that LMS technology has made a considerable place in the institutional agendas and what people in academia believe, and do, with those technologies in reality. Even though a substantial number of institutions of higher education consider online learning as a critical part of their long-term strategies, 30% of academic leaders believe that online learning is inferior to traditional learning and 56% of faculties are still neutral in terms of online learning acceptance[6]. On the top of that, studies have found that those technologies "are harder to learn than expected" as well as "time consuming and inflexible" and despite expectations "many students are not proficient with technology". Blackboard and other LMSs rarely discuss pathways for improving learner's knowledge and skills with their systems. This kind of training is often left as a user's choice.

Technology Discourse and Reality

The STS research has already established that technology is a human affair; what is said in the official papers is not always how things work. Any misinformation about LMS software would, however, bring tremendous consequences in education, where millions of people operate those technologies daily and where technological choices remain mostly institutionalized. Recently, the American public has been bombarded by a discourse that doesn't necessarily fit in the eLearning realities. It highly emphasizes a

[6] The data are part of a study on the Online Education in the United States 2011 by Allen and Seaman. http://www.babson.edu/Academics/centers/blank-center/global-research/Documents/going-the-distance.pdf Retrieved on 12/21/2013.

specific terminology including but not limited to terms such as *eLearning and learning society*, *technology as a powerful tool*, or *globalizing technology*. Frequently used associated with other terms – such as democratization, education, or low cost, already known for their positive reminiscences in public – this terminology may lead to an incorrect public impression and the lowering of public awareness of technological choices and related policies. Some recent data show that even though an increasing number of universities and colleges have embraced the idea of eLearning at different levels and have future plans for related improvements, the issues associated with the involvement of these technologies in higher education are still a concern that needs to be resolved. The discrepancy between an official rhetoric on the social values of eLearning technologies and the actual level of utilization of those technologies requires an adequate understanding of technology beyond its technalities.

Proprietary vs. Free and Open Source Software

A long complication between Blackboard and some other LMSs in the market is related to its once strong positioning as a Proprietary Product[7] versus Free and Open Source Software. It appears common that any product in a capitalistic society could be proprietary, yet that notion is contradicted by the new possibilities offered by the technological properties of the software itself. By nature, software can be accessed and developed with no rigid restrictions in time, place, culture, or language. These

[7] I am using capital letters here to draw a parallel with its opposite: Free and Open Source Software, which is in capitals because of the name of the movements associated with that software.

characteristics have led to a specific organization form of software production. Technically, a program can be continuously improved by programmers from different locations and with no time restrictions. Sometimes, the developers can arrange their individual work into a collective attempt for improving the source code of software. The production of the so called technology communities – that are more about shared work, interests, and ideas rather than technology itself – is known as common goods, a form of production that have been long known in society. Yet, in a society where production, as a rule, is organized for profit, the collective work that produces common goods has become legally controversial.[8] Who should own the common goods produced by a collective attempt? If not free to public and those co-developers are not the legal owners of what they produce, then who has the right to sell such a product? Even though the questions here may seem at the edges of the technology of software, they have a deep impact on the development of software itself.

Acquisitions vs. Centralized Product Line

Technologies are cultures; any inconsistencies during the process are usually associated with users' confusion and distress. Things can become problematic for learners especially when an LMS is a software package developed by groups of people who have not shared at least the same technological logic. For example, you are taking

[8] Free and Open-Source Software (FOSS): As its supporters explain, the idea of free here is as in free for freedom of speech and not as free in free beer. It relates to software that are "liberally licensed" to allow user[8] to "use, copy, study, change, and improve" a software by offering access to its source code (Source code is a set of computer instructions (including comments) that is usually shown as text). Even though FOSS is used in a society as ours, known for a narrow specialization in the field of production, the developments of hardware and software have taken their own paths, not necessarily compatible.

an online class on Blackboard and things seem to work fine. The teacher announces a Wimba meeting and suddenly you realize that your Wimba "doesn't work." Technically, this would mean that Wimba has a different set of technological requirements from Blackboard itself, needing a different browser for instance. For a learner who is not familiar with the working principles of software technology (a kind of knowledge that is not required for software operating), a similar incident is often interpreted as a technology failure. For a developer, this is "how the system works"; if that arises as an incident, it is, usually, a user issue. "Partly because of its many acquisitions, Blackboard products sometimes seem stitched together like a patchwork quilt with customers complaining that it can feel that they are working with entirely different companies not different lines of product."[9], states Bhatt the CEO of Blackboard since 2013 in an attempt to criticize some of the previous practices within Blackboard company and justify the changes associated with the new leadership.

"Historically, the company's acquisition strategy targeted rivals that had reached a certain scale in an effort to limit competition," he adds. In this respect, the company is described as a big buyer of smaller tech companies for the sake of reducing market competition and not necessarily for improving the product. Blackboard, Inc. has acquired companies such as AT&T Campus and CEI Special Teams (ID card developers) in 2001, WebCT (education software) in 2005, Angel Learning, TerribyClever Design, LLC, (iPhone application), Wimba, Inc. and Elluminate, Inc. all in 2010 , iStrategy (a data

[9]Heussner, K.M. A New Blackboard? https://gigaom.com/2013/07/12/a-new-blackboard-4-ways-the-ed-tech-giants-new-ceo-hopes-to-win-back-market-share/ Retrieved on 07/20/2013

analysis system), and Presidium Inc., (administration and academic support service) in 2011. Even though the methods of acquisition are not a subject of this study, related issues experienced by Blackboard learners came under attention.

Market Changes

The market life of Blackboard software is also a complex indicator of learner's attitudes as well as the politics within higher education. Figure I-2 shows a graphic view of the major players on the LMS market showing a significant market share for Blackboard along with others such as Moodle, Sakai, Canvas, Desire2Learn, eCollege, as well as homegrown systems. Recently, the market of higher education LMS has reported significant changes, showing that Blackboard is losing shares market ground[10] and one significant factor may be that Massive Open Online Courses (MOOCs) have started to use their own platforms. A MOOC is a new model for online classes characterized by an extremely large number of students who can attend virtual courses from all over the world. MOOCs have no specific criteria of registration and offer no academic credits for students unless they pay a fee and are tested on the subject. These kinds of courses are, presumably, based on lecturing and teaching methods of well-known professors from the so-called elite universities[11]. Described as a real dream coming true for many who assumedly cannot afford an elite education, MOOC technology is described as leading to

[10] Hill, Phil: State of Higher Education LMS Market: A Graphical View.http://mfeldstein.com/state-of-the-higher-education-lms-market-a-graphical-view/ Retrieved on 07/01/2013

[11] The online discussions show that there is quite a confusion from how these courses are organized and with what purpose to what we can learn by attending the course.

a "further democratization of education," a discourse already familiar at least since the celebration of Blackboard. The attempt remains deeply criticized; MOOC is often described ineffective as well as a *démarche* against smaller college professors who may lose their jobs. Clay Shirky, a best-selling author and a well- recognized associate arts professor from New York University, in an interview given to Wired Chronicle[12] about MOOCs states that he MOOCs makes him worried when he thinks that what comes with MOOCs is just "the introduction of commercial marks in our academic core,". Then he adds, "I can't think of a single time that this has gone well."

Changes in Conceptualization

The market changes, as shown in Figure 1-2 are associated with changes of conceptualization. Instead of product improvement, the market competition has led to product rearrangement; the attention is shifting from technology as a product into technology as a service. For example, Blackboard has launched the Retention Center13 and Instructure has launched Canvas App Center14. In this respect, Retention Center of Blackboard is an application that allows instructors to get "analytical insights on learning and activity gaps" and "help them quickly diagnose the students who are falling behind." Canvas App Center, in addition, is an application that will allow Canvas instructors to

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[12] Shirky, Clay Interview on MOOCs to Wired Chronicle. http://chronicle.com/blogs/wiredcampus/clay-shirky-says-moocs-will-matter-but-worries-about-corporate-players/45087?cid=wc&utm_source=wc&utm_medium=en Retrieved on 07/26/2013

[13] Read more on Ray Henderson's blog: http://www.rayhblog.com/blog/2013/03/big-problem-new-solution.html?utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A+RayHenderson+%28Ray+Henderson%29&utm_content=Google+Reader. Posted on 03/13/2013 and retrieved on 06/28/2013

[14] See the press announcement on http://www.prnewswire.com/news-releases/instructure-announces-canvas-app-center-202711971.html Retrieved on 07/01/2013

easily add applications of their choice without the need of getting the system involved in the process. Phil Hill, one of the LMS market analysts, considers it a move from an enterprise LMS market to a Learning Platform market, where enterprise LMS means a smaller, academically-facing version of the Enterprise Recourse Planning (a model based on monolithic, full-features software system that could be hosted on-site or by a managed hosting provider) and Learning Platform means a system that does not contain all the features in itself and is based on cloud computing, multi-tenant, software as a service (SaaS)[15].

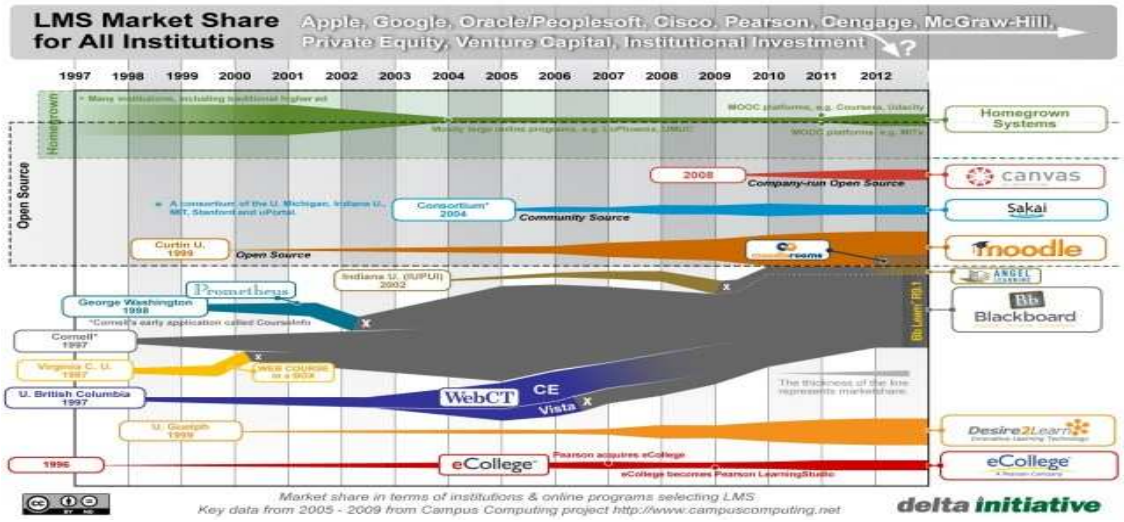

Figure 1-2: An LMS Market Share

Changes in Regulations: Who has the right to teach?

[15]Read more to Phil Hill Farewell to Enterprise LMS and Welcome to Learning Platform. Posted on February 2, 2012. http://mfeldstein.com/farewell-to-the-enterprise-lms-greetings-to-the-learning-platform/ Retrieved on 06/26/2013

None of those developments and changes remains just technological. Not only do they prove a market impact in the developments within higher education in general and teaching philosophy specifically, but they also indicate the political side of technological changes. A discourse metamorphosis – from *simple communication tools* to *powerful teaching tools* – that associates those technological changes is a clear indication that the eLearning technologies have being used as a political pressure over the teaching authority. Legitimately, people in the field ask: Who has the right to teach? So far, expensive teaching degrees, licenses, and other requirements have put restrictions on who can teach in American colleges. The possibility of teaching without being present, made possible through eLearning technologies, is aggressively employed to create the illusion that an online course can be taught in a teacher's absence.

The move is a multi-facet attempt to gain profit. Being considered the industry of the century, both education and social learning are in peril of the games of market. As American institutions of higher education increasingly look to different corporations for products and services, these corporations are rushing to increase their market gains through the use of technology in education. The Internet applications are becoming the new trend in the field. For instance, even Pearson – an 18-billion dollar text printing company – is seeking to regain market through digitalization and online course offerings[16].

[16] The company is going under a deep restructuration considering online course productions and replications where professional teams develop online courses associated with online materials that are then sold to college students for expensive access codes, which differently from hard copy texts are disposable.

This boom of new products and services of any kind that are presented with the promises of improving education but have been discarded as "it doesn't work" in more instances is constantly challenged by millions of educators who get their jobs downgraded and discarded similarly to what happened to the industry workers at the beginning of the last century. When those well-educated workers seek to protect their constitutional rights through teacher unions, some politicians and lawmakers act in unison with corporate interests by attacking unions. Interestingly, eLearning developments are associated with changes even on the theories of learning – how people learn, what constitute a good course, and what good teaching looks like – that emphasize the role of teacher as a facilitator and highlight a student-centered approach similar to the customer satisfaction approach. The problem with this view is that it neglects the difference between the public interest on social learning and what interests the individual learner[17]. If an individual learner's best interest is getting the best grade with the minimum work, the public interest is to get the highest outcome of it. The biggest issue is that many of those new practices associated with the eLearning technologies are made acceptable by using the new teaching philosophy as a premise.

In summary, the implementation of eLearning technologies, and LMS software under that umbrella, are prone of a variety of issues, which extend the systemic issues of the known technological systems. Generally speaking, those issues express the dynamics of American culture and how education, technology, and law are understood in this part

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[17] Here I am paraphrasing Cass R. Sustain who states:"There is a large difference between the public interest and what interests the public." Sustein, C.R. Television and the Public Interest, 88 Cal.L.rev.499 (2000). Available at: http://scholarship.law.berkeley.edu/californialawreview/vol88/iss2/9

of the world. The issues of eLearning technologies are intertwined with how freedom, democracy, and capitalism are understood and exercised in the contemporary American education. Importantly, this dissertation documents the institutionalized labor and organization that unrecognizably feed the market value of those user-friendly tools. The story of Blackboard software – which discovers quite a bit of that picture – is not just a story from the past. Rather, it is a story in the making as millions of people are involved in this system daily through their jobs and lives. By telling it, this study aims to expose the reader to a deeper understanding of the developments of Blackboard software in higher education and especially to the social significance of what can be described as the love or hate relationship of the so-called Blackboard users.

Main Concepts

The focus on Blackboard software, and its user, as a special case for documenting the expansion of the market philosophy and practices exceeds technology itself and requires a unique framework, the main concepts of which require an explanation in the context of this study.

Social Order

For this study, social order means how American society is rendered at the beginning of the 21st century, referring to a set of social structures (economic systems, law systems, education systems, information systems), social institutions (American government, universities, organizations), and social practices (production, consumption, learning, commons-based peer production). Even though this is not a study on social

order, the involvement of the concept here satisfies the holistic approach of the study as the developments within Blackboard software at University during the 2012-13 school year were continuously seen, checked, and explained into a bigger picture.

Social order, even though the term does not appear anywhere in the study, became important for understanding the American society as a whole and the social place of the higher education system within the society in an era of globalization. In this respect, the implementation of educational technologies and the role of educational institutions in the process are examined as part of the capitalist developments in the American society at the end 20th century. In general terms, the concept of the larger context became important for understanding the role of culture and cultural mechanisms (set of beliefs, values, symbols, and rituals) as maintaining the social order.

User

In an urban folklore, user is often considered an individual with a physical touch with technology. The idea of user remains unquestionable and is largely taken for granted. However, the high occurrence of other concepts that associate Internet technologies and users – such as simple tools, user friendly, or user issues – led to a closer discursive attention and a problematization of user. Generally speaking, user became a total social fact[18] of the modern times deeply imbued with meanings, relations, associations, and connections among technology, learners, and institutions that altogether

[18] A thing originating in the institutions or culture of a society that affects the behavior or attitudes of an individual member of that society.

represent a form of social ordering. Yet, the concept of user was constantly seen in a larger context based on the idea that what we do in everyday life with eLearning technologies is culturally connected, affected, produced, and reproduced by social structures in a larger scale. (Pfaffenberger 1992)

Networks

For this study, networks are defined as connections, associations, and relations among individuals, institutions, and technology rendered on purpose, which share meanings without necessarily fully accepting them, and which produce and impose networking power as a means of pursuing certain goals. The term became of a special importance for several reasons: one, it clarifies the nature of social order as *in making* versus *static*: a society of networks with changeable connections and associations; two, even though the idea of networks may offer an equal treatment for all humans, things, and ideas alike – which means an abundance of facts and details that fit the holistic description of the study – it is also associated with the concepts of power and power allocation (Castells 2011); three, it relates to the emergence of the networked information economy (Benkler 2003), an economy characterized by peer-production and non-market products, both important in clarifying the unique properties of software and its political economy.

Importantly, the idea of networks is not competitive with the idea of systems well known in the studies of technology (Hughes 1989). It allows instead for showing how connections, associations, and relations help extending a system, making it possible to

recognize systemic issues and intra-systemic conflicts. Figure 1-3 is an illustration of messy and complex connections, affiliations, and relations among universities and professors with companies, venture capitals, and non-profit world in MOOCs' design, implementation, and funding. What the big picture doesn't show, however, is how those connections, affiliations, and relations are established, produced, enforced, and have effects on each other and on one's daily life and work. There are two derivate concepts in the study – *learner networks* and *user networking*. Learner networks are connections, associations, and relations among individuals and institutions, rendered for the purpose of an institutional learning, that share meanings without necessarily fully accepting them and that produce and impose knowledge power as a means of pursuing certain goals. User networks are connections, associations, and relations among representatives of educational institutions, corporate, and technology rendered for the purpose of creating a culture of use that share meanings without necessarily fully accepting them and that produce and impose power as a means of pursuing shared goals. A user networking means the processes of building up or maintaining a philosophy of use and informal relations driving a culture of use in the field of education. User networking became another important concept for the study as it showed how a corporate agenda penetrated and became dominant in the network of learning.

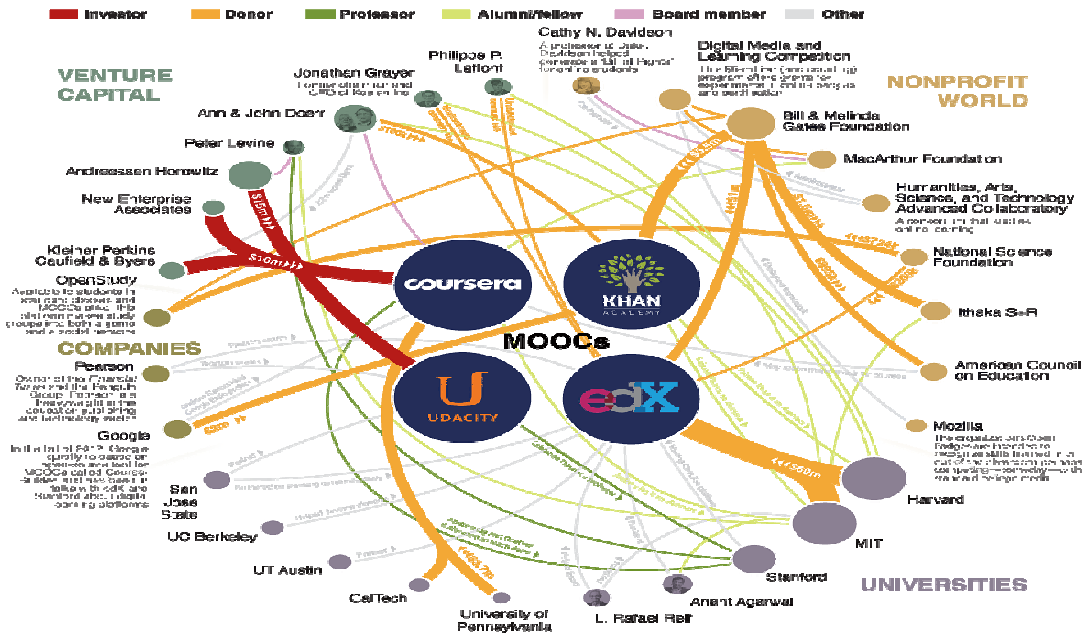

Figure 1-3: The complexity of the connections through eLearning

Learners

Learner is an inclusive term used in regard to a learning technology. It could mean a student, professor, administrator, designer, or other person. The term is generally used for people who take a learner's seat during technology processes. From a grouping perspective, learners appear as a heterogeneous group of people who usually (but not necessarily) aim teaching and learning, or help teaching and learning, in higher education. Most of the individuals in this category do not have learning technologies in their agendas unless they are seen as helpful or necessarily for an individual achievement. Two more clarifications must be made about this category. First, *individual technology acquisition* is a cover term for the processes during which a learner acquires an

institutionally ascribed role, as well as technology competency and confidence. Secondly, learners under the professorship sub-category take a unique role in this category. A technology success or failure may impact student-teacher relationship, which means that technology functioning can affect their teaching performance/evaluations. In addition, teaching online requires a set of new knowledge and skills, usually different from their recognized area of expertise; a lack of mastering the technological knowledge and skills may affect their reputation. Also as the last developments in the area of education prove, the eLearning technologies are strategically seen as a teacher replacement by certain neo-liberal groups, putting teaching jobs and status in jeopardy.[19] Yet, a teacher, instructor, or professor is a preferred source of knowledge when operating an LMS, and a good connector between students, institution, and technology.

Technology (and its Ambiguity)

It is a common mistake in modern human society to identify technology with a product and ignore the processes involved. This misconception makes it difficult for how to understand the nature of technology; Sahlins for example, states that, "For the greater part of human history, labor has been more significant than tools, the intelligent efforts of the producer more significant than his simple equipment."(Pfaffenberger 1992b:497) Sahlins' concept, however, challenges a general perception, which usually equates

[19] This is what Wall Street Journal (May 30, 2012) wrote: The Nation and the world are in the early stages of a historical transformation in how students learn, teachers teach, and schools and school systems are organized. http://online.wsj.com/article/SB10001424052702304019404577416631206583286.html Retrieved on 07/02/2013

technology with its materialistic forms and formats, neglecting the complexity and processes of technology. With human knowledge and work as significant sources of social transformations, it is feasible to see that their alteration into tools, machineries, and related human skills has become an object of human effort and fascination as well. A glorification of the transformative powers of tools and machineries, however, goes beyond any human attraction. It is only during specific circumstances in human history that the assemblage – of human knowledge, work, skills, tools, and machineries, and much more – labeled as *technology,* has gained such an unusual property that can either help society as a whole with a better lifestyle quality or become a tool of exploitation in hands of a privileged few.

The culture of Technology Use

This study should be considered within the context of an Internet culture, which, generally speaking, is a learned and shared understanding of what people can do *online*. While the Internet is *a cool thing* for many, many others may not even know that the Internet is the technology that makes possible the global system of interconnected computer networks. Interestingly, the Internet, as we know it, however, became popular in the mid-1990s, a time corresponding with the fall of the communist bloc. While the world wide social, political, and economical developments of that time made the world integration turn from an aspiration to a closer reality, much of that credit went to the Internet, which was apprized as a social connector. That provided for a glorification of the Internet technologies yet for a strategic reason: the Internet developments were

associated with a boom of Internet-related technologies, known as software applications[20]. The new products and the new services opened the possibility to redefine the boundaries of the market in fields such as education, banking, or health care. The myth of the Internet (and its related technologies) was strategically involved to build what is described here as *a culture of technology use* which creates a collective understanding that the Internet technologies are *needed* and their use is perceived as *a social value.*

Institutional Power

Generally speaking, learning is cultural and culture is learning. However, this study refers to *learning* as an institutional learning or the learning that is recognized by law and is organized, improved, and sanctioned based on well-defined criteria. This brings into the discussion the role of educational institutions that are organized hierarchically and have decision-making powers. The institutions of American higher education can be considered learners networks; they are all parts of American education that appears as a system which is built in performances. Not only are performances (as in "things accomplished" or "working effectiveness") measured by standards (final grades for students, evaluations for professors), but they also generate social and monetary

[20]Application software is a computer programming that makes a computer useful beyond the operation of computer itself. If computers have any values, it stands to their ability to carry out a set of instructions. Called machine-readable instructions (or software), such a set is developed separately from a computer (hardware). Software, an inclusive term for both machine instructions (*binary code* or a code understood by a processor and *source code* or a code that should be rendered into the binary code through an interpreter), can be further categorized as system software and application software. System software is the set of operating instructions, or what makes a computer function. In this perspective, application software is the set of instructions that makes a computer useful.

statuses for individuals and institutions alike, providing for inequalities and hierarchies within the system.

The data of this study shows that institutional power has a crucial role in the transformations of learner and learning. The concept of institutional power became a key in understanding the user networking within the system of American higher education. The data shows that under the user networking power and strategies, not only are the eLearning technologies institutionally embraced, but a strategic discourse is also utilized to allow for the imposed technology and political changes to be socially accepted. Finally, not only are people, energy, work, and organization involved in maintaining technologies such as Blackboard, but it also becomes an institutional obligation to produce and maintain a technology user.

Globalization

Globalization, a term that descriptively is referred to as the "network of interconnections and interdependencies that characterize modern social life" (Tomlinson 1999:2), is in its kernel an extension of capitalism not only geographically but also in the public spheres such as education and medical care. There was a twofold phenomenon happening in the early of 1990s, technically and economically. Technically, there were increasing possibilities for connections, information, and communication through the Internet among people all over the world. On the other hand, the need for the capital to extend the market had become an imperative which shows on the hegemony of neoliberalism (Harvey, 1995). The changes that took place in the political map of the

world in early 1990s should be also understood as new possibilities for a further extension of the market philosophy and practices. As the history of connections between American academia and the corporate world show, new markets have always been a goal for capital. The Internet technologies only marked a new stage of that endeavor. The developments of Blackboard software in the field of higher education are a clear indication of how to understand the extension of capitalism in the field of education through technological transformations.

Culture and its Characteristics

The concept of culture and its properties remain essential for the study. If an exploration of LMSs became a useful tool for understanding the extension of the market in the field of education, the concept of culture provided for an adequate understanding of technology and the construction of technology use as a social value. Culture is "a society's shared and socially transmitted ideas, values, and perceptions that are used to make sense of experience and generate behavior and are reflected in that behavior" (Haviland et al. 2013:163). Culture is learned and shared; people learn and share meanings and ideas as members of a certain society, without necessarily accepting them. The learning and sharing of culture, however, is not a smooth, natural process. Usually, social norms and beliefs are forcibly imposed in society; there are rewards for the ones who comply with the shared beliefs and social punishments and sanctions for ones who do not. In these terms, imposing the use of LMSs as a social value is the beginning of a long process that aims at a user's commodification through a transformation of learner

into an LMS user. In addition, understanding technology as symbolic it opens the door for a deeper understanding of the discourse surrounding those technologies and the social meanings associated with technology symbolism.

CHAPTER 2 :LITERATURE DISCUSSION

Figure 2-1: Two contradictory sides of eLearning

Introduction

There is no doubt that the social implications in education caused by an extension of the market philosophy and practices in the field are highly characterized by learners' resistance, which mostly shows on the work of social activists and academics in education that aim at a public awareness against a market fetishism. A unique form of this resistance, even though often mistaken as a resistance against technology, is the resistance of LMS users to accept and comply with all what appears as technology innovation and progress in education. In a larger context, the implementation of eLearning technologies in the field of education is denounced as a strategic attempt for profit-making, a tendency that has reached its peak by seeking a commodification of user. An exploration of this social resistance requires a clear understanding of *globalization*, *technology*, and *user* such concepts that appear quite complex and complicated in contemporary research, but of *culture* as well which flexibly links all of the three.

Globalization: a Broader Context

Introduction

Figure 2-2: The fresh new interface of capitalism

In spite of any differences on what globalization is and how it should be described, there is a large body of literature that regards globalization as an extension of the capitalistic philosophy and practices geographically but also into the social domains of education and health care. The neoliberal theory – responsible for a social legitimating of the market extension – holds true that *one*, "human well-being can best be advanced by liberating individual entrepreneurial freedoms and skills within a framework characterized by strong private property rights, free market, and free trade"; *two*, "[t]he role of the state is to create and preserve an institutional framework appropriate to such practices" and *three*, "if markets do not exist (in areas such as land, water, education…) then they must be created, by state action if necessary." (Harvey 2007:2) Interestingly, the Internet technologies (differently described as the information technologies) are apprized by the neoliberals as safe channels for maximizing the market transactions and guiding decisions in the market place. In the field of education, however, those technologies are valued for maximizing the market transactions – therefore profit – through an increase of the number of learners

who can be reached through technology. Assumedly, by LMS implementation, the educational institutions would expand their numbers – therefore profit – with no extra space and for a shorter time.

The concept of globalization is employed in the study for understanding the ground provided for the latest developments that have taken place – technologically, economically, and politically – in the contemporary American society in general and specifically in the field of American higher education. It led into an understanding of user networking, as well as collective effort and peer-production in software making. It helped to conceptualize user as a cultural outcome of institutional network that consists o. The involvement of concepts such as collective effort, labor, and deskilling in education (a field already assumed with a vocabulary different from the one used in the field of production) became a turning point for the study. Choosing a globalization literature resulted, however, difficult and complicated as globalization has become a buzz word in the American media and literature during the end of the last century with no clear, single definition yet.

Different Understandings on Globalization

In neutral terms, Noam Chomsky says that globalization means international integration[21]. The new word (globalization) wrapping an old concept (international integration) has been, however, long claimed by a "narrow segment of power and

[21] Chomsky, N. Discussion on Globalization. Posted on youtube.com on 10/30/2006 http://www.youtube.com/watch?v=AHJPSLgHemM Retrieved on 05/02/2013.

privileged" who equal international integration with "the right to invest" globally. Accordingly, globalization consists of two different perspectives: One perspective that represents a human dream on the world as a shared place inhabited by humans living in harmony, and the other one that demands the world as a single market. Research in globalization studies (Robinson 2004, Friedman 2006, Wallerstein 2004a and 2004b, Robertson 1992, Tomlinson1999, Tsing 2002, Llewellyn 2002, Appadurai1996) describes the world as a *single market*, a *global society*, or *global networks*.

It should be added that regardless of many descriptions on globalization, a semantic overview on how the concept evolved in time shows an affinity of its genesis with the idea of consumerism and global consumers which speaks for an increasing tendency of viewing the world as a single market yet selling an image as social integration. The earliest usage of the term encountered during my research it implies globalization as a vision on prospective global consumers– an idea beyond that of nation – unified as a category under the "regime of industrialism". In *Culture Theory and Industrial Analysis* Paul Meadows (1951) elaborates on the "industrial culture" as "globalizing", emphasizing a prominent role of technology in a pattern of world changes. The article theorizes the observation on an expanding of industrial products and capitalist mode of production. Rather than a simple political integration, the globalization is seen as a cultural integration of consumers that consume the same products. Accordingly, every society develops a "system of meanings" which remains "unique" and functions as "a whole". Within the system, made of three main subsystems – technological, sociological, and ideological – industrialism relates to the appearance of "a new system of technology"

which affect the social system profoundly providing for other changes within. In general, changes in technology oppose "[the] tendency toward cultural localization" and provide for what Meadows describes as a "cultural universalism". Meadows wrote that with industrialization, "a new culture system has evolved in one national society after another; its global spread is incipient and cuts across every local ethos". The industrial culture is then described as "massively adaptations to logic of technology". Meadows uses *globalizing* in terms of an extension of industrial technology and its cultural logic in geographical terms only. (1951)

Another article – *Communism and Globalization of Politics* – published by George Modelski in 1968, speaks in favor of a political attempt of capital for an ideological integration of the world as a "political response" to the idea of "the world communism"; a strategic attempt to resolve political and ideological issues of an expanding market. In this respect, a *world system of politics* with world organizations and world politics were seen as keys for resolving the Cold War crisis that followed the WW2. The concept of *global* system was, interestingly, explained similarly to an understanding of what made Islam a "world fact", meaning a system, the parts of which maintain an allegiance to "a body of common doctrine" with a "significant amount of cooperation and exchange", that functions in the state of "decentralization" and "lack of central directions". Modelski proposed the development of "a global layer of interaction substatianal [*sic*] enough to support continues and diversified [world] institutions". Obviously, in Modelski's article, instead of a description of natural spreading of

"industrial culture", a (worldly) political agenda displays, an agenda seeking dominance through a world political system with little said about culture and technology.

A prominent work preceding the globalization discourse is *The Modern World-System* by Immanuel Wallerstein (1974). Wallerstein elaborated the concept of the modern world-system ("*économie monde*") as rooted in the economical developments of the 15th century, a time when the crises in European feudal system stimulated the important technological innovations of the 16th century and an extending of the market. Both provided for a geographical division of labor, where industrialized countries, described as core countries, could control and benefit from the global market. Others, described as periphery or semi-periphery countries, would provide for raw materials and cheap labor, or "buffer" the process. This explanation helped me in location the American higher education, and its developments, in a global map. Interestingly, Wallerstein states that different groups – states, corporations, and people – who differentiate from each other by languages spoken, religions practiced, and customs developed, appear loosely tied to the capitalist world-system. Accordingly, the system's principle is the endless accumulation of capital and it exists as a structure mechanism constituted within the system. The ones, Wallerstein wrote, "who act with appropriate motivations are rewarded and if successfully, enriched." The rest will be "punished" and eventually "eliminated from the social scene." As it will be seen in Chapter V, these general yet substantive observations have enriched the analysis of the data collected in this study.

Theodore Levitt's contested article *Globalization of Markets* (1983), one of the most cited sources on globalization, consists of the belief that the developments of technology (transportation, communication, traveling) have already provided for what he describes as "a new commercial reality", which is "the emergence of global markets for standardized consumer products on a previously unimagined scale of magnitude." From this perspective, globalization has being seen as an economic possibility preceded by a modern technology development that would bring wealth and prosperity to all, corporations and people. Levitt's observations on an expanding commoditization reality became a reality- only a few years later the world would see the fall of the Berlin Wall. Levitt's article consists of four main assumptions: technology as a generator of progress, standardized consumer, and a satisfied one, global markets, and the contested concept of homogenization. Levitt's article marks the beginning of what could be described as a profit hegemony language. Regardless any sporadic criticism, Levitt's vocabulary became part in many policy changes.

The above descriptions, based mostly on the Weber's concept of exchange and an active role of agency, encounter two issues: One, they are based on an understanding of globalization as a human/economical phenomenon conditioned by the developments of technology (Meadows 1951, Levitt 1974) or as a project/response to the political global structure (Modelski 1968); visions that hide a political agenda for further expanding the market and a market mentality. Two, even though from different perspectives, the work of Meadows, Modelski, and Levitt describes the phenomenon as significantly "new": new industrial technology, new reality, new politics, new policy, new markets, new

cultures, and new global relationship, themselves a good proof that the texts were in one way or another part of that *globalizing* agenda, which fueled a larger symbolic discourse.

A Theory of Globalization

In the contrary, Robinson describes globalization is the "unifying the world in the same capitalist mode of production." (2004:159) Differently from Wallerstein, who finds the genesis of globalization on the Weber's concept of exchange, Robinson considers globalization as deeply rooted in the process of production. It is "the underlying structural dynamic that drives social, political, economic, and cultural-ideological processes around the world in the twenty-first century and is therefore linked to our individual and group biographies." (Preface: XV) The essence of capitalism is production undertaken through a particular form of social interaction…the capital-labor relation…in order to exchange what is produced, *commodities*, in a market for profit.

The position taken in the study is what Robinson considers an extension of capitalism in the domain of social life; it highlights production versus exchange (Wallerstein 2004b) and capital-labor relation versus ideas (Robertson 1992, Tomlinson 1999) as prominent sources of globalization. This is not to underestimate globalization's tendency for homogenizing market or consumer or user globally. Instead, highlighting the mode of production, and capital-labor relations, as fundamental in determining the character of globalization means that when such a tendency for homogenization appears as logical (global users, as an example) one should pay close attention to the mode of production and the capital-labor relations for a further clarification. As it will be

explained in the coming paragraphs, this understanding marked a turning point for this study.

Robinson explains that globalization is *unifying* in the sense that "the vast majority of peoples around the world had been integrated into the capitalist market and brought into the capitalist production relations". It is also *expansionary*: "It order to survive, capitalism requires constant access to new sources of cheap labor, land, raw materials, and markets. In this sense, there are both extensive enlargements (and geographically commodification) and intensive enlargements (human activities that previously were outside the logic of capitalist production are bought into this logic). Globalization is *hegemonic:* It provides "material rewards" and "impose sanctions" that affect groups and individuals alike (2004:vx). These explain the conditions during which fields such as education and health care become fields of commodification.

Networks of Power

There are other important concepts under the idea of globalization which, even though from a perspective not necessarily in fully agreement with Robinson's theory of globalization, became helpful for the study. Specifically important became the Tomlinson's concept of "network of interconnections and interdependencies" as a characteristic of modern social life. (1999:2) The networking concept, already known from an ANT perspective, became helpful in understanding the developments within the American Higher Education that preceded the developments of the eLearning technologies. Additionally, referring to Castells, power, or the ability to make decisions

and affect other's behaviors, has taken new meanings in what is described as a digital age, networked society, or networked information economy. Considering that the involvement of eLearning technologies in higher education is an institutional matter, the idea of power and networking became quintessential for the study. Castells states that, even though social networks are not a new concept in society, the networks that involve the electronic technologies deserve special attention because technology is involved in exercising power. Importantly, "[p]ower relations are the foundations of society, as institutions and norms are constructed to fulfill the interests and values of those in power." (2011:773)

User vs. Learner

Introduction

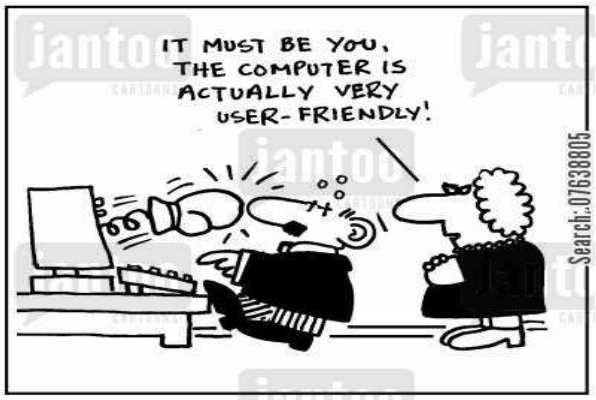

Figure 2-3: "It's always users' fault"

Even though LMS user is often mistaken as just a learner in physical touch with technology, research focusing on user proves that technology user is a complex and sophisticated concept, imbued with symbolic meanings. The understanding of user requires a holistic approach with strong ties and explanations in a context that provides for technology growth. *User* remains probably one of the most popular terms since the Internet became a household name and system. As much as the term may sound familiar, the concept appears complex

and not without implications. A user is the one usually blamed when the Internet technologies fail. Careful observations find the so called user issues much more complex than simply a user's fault, a fact that remains obscured within the official discourse on eLearning technologies. In general terms, the user synthesizes one's ever-changing position within the flux of technology during a given time.

The issue faced by the changes within the learning landscape[22] goes beyond the involvement of the eLearning technologies; it regards a demand for using those technologies to define and categorize learners and learning. Terms such as online education, online classes, and online learner, commonly used in both daily discourse and official documents, not only make a distinction within learning and learners, but also demand that distinction. For example, some institutions have even created a profile for online learners (Teja and Spannaus 2008). "Is the online learner a distinct subspecies among the wider species of learners in general?" academics in education ask (Wisser 2008:25). Obviously not, they answer.[23] The educators insist that learning must be defined by the learning outcomes and not by technologies. However, "as the processes and tools evolve, we anticipate further differentiation in the competencies required on the online and face-to-face learner. Some of those changes will be in the competencies concerned with use of the tools." (Teja and Spannaus 2008:206) The problem is not with the learning of new skills and competencies per se. As the researchers in education and

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[22] See Learners in a Changing Learning Landscape,2008. Jan Wisser and Muriel Wisser-Walfrey Eds., Springer

[23] New Online Learning Technologies: New Online Learner Competencies. Really? Ileana de la Teja and Timothy W Spannaus on the same volume.

the educators warn, the problem is that the new competencies are becoming a trend of their own that often overcome the learning objectives.

Semiotics of User or User in Context

The meanings associated with the *user* depend on the context of the term. The concept of a *user* appears with a social history of its own. According to the Etymology Online Dictionary,[24] the word *user* is thought to have first been utilized circa 1400, and then institutionalized as *user of narcotics* since 1935, *user of computers* since 1968, and *user-friendly* since 1972. The Internet search, however, shows texts that date back to the 1800s with a *user* as a person exercising certain property rights, which suggests that the concept of a user may have its roots in the English common law generated in the Middle Age for regulating land ownership and use. The last form no longer sounds familiar in the everyday use. Commonly, a *user* today is understood as a person or individual who uses, misuses, or consumes something.

Depending on the context, a user could be associated with a negative connation as in exploiter, drug user, and substance abuser (Figure 2-4), or either a neutral or positive connation as in wearer, utilizer, usufructuary, end-user, and consumer (Figure 2-5). In both cases, a user means an individual, mortal, person, somebody, someone, and a soul. Interestingly, a person using another person's place in exchange for money is usually called a tenant, but never a user. In addition, an individual entitled to the First

[24] SCOT authors use "relevant groups". In The Social Shaping of Technology, they use the word "actors". (MacKenzie and Wajcamn, 1996:17) http://www.etymonline.com/index.php?l=u&p=17. Retrieved on 04/12/2011.

Amendment of the American Constitution is usually not “a Constitution user,” but a citizen of the United State of America.

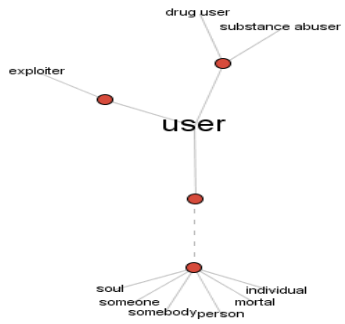

Figure 2-4: User configuration1

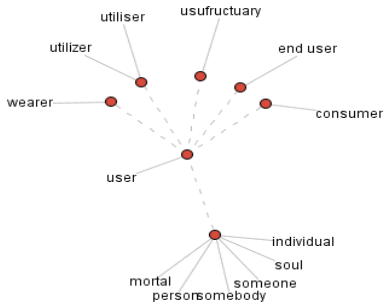

Figure 2-5: User configuration 2

Another context provides for a user as an operator, associating the concept of user closely with technology and especially with computers and the Internet. As stated, a user as in computer *user* has been used since 1968. A Google image search with “user” as the search key generated 1,150,000,000 links in 0.16 seconds.[25] At the first sight, excluding a few, most of the images show strong associations with Internet technology. For example, Illustration 1 (Appendix 1) shows the colorful sketch of a group of individuals with no

[25] www.google.com Retrieved on 03/30/11 Note: The search retrieved 6,370,000 000 entries on 0.22 seconds on 07/10/2013.

physical face features in a metallic gray background. Another image is a black box that states, "USER. Support your habit."(Illustration 2, Appendix 1). An interesting figure shows a whole block filled with rows of words that seem mostly like a code (Illustration 3, Appendix 2). One of the pictures (Illustration 4, Appendix 2) is like a whole story developing the concept of user in the finest details by using pictures, arrows, and words like experience, expectations, applications, or goal, tasks, functionality. The overwhelming number of images with computer-related details may suggest that *the computer user* form has gained ground over other forms.

A similar assumption is supported by an entry in Wikipedia.com that states the following:

> A **user** is an agent, either human (**end-user**) or software, who uses a computer or network service. A user often has a **user account** and is identified by a username (also **user name**), **screen name** (also **screenname** [sic]), **nickname** (also **nick**), or **handle**, which is derived from the identical Citizen's Band radio term.
>
> Users are also widely characterized as the class of people that use a system without complete technical expertise required to understand the system fully.[26]

This definition narrows down, but also challenges the previous information. Even though it is described as "an agent" (loosely assuming a potential for change), the word is utilized mostly as an operator who is part of a network, expanding the notion of a user by adding non-humans (actants). It also emphasizes three moments: one, users as *the class of people* (with "the class" meaning…what? and with the other class/classes being…what?), two, users as a group defined within *"a system,"* and three, people who use a

[26] http://en.wikipedia.org/wiki/User_(computing). Retrieved on 12/26/10.

technological system *without complete technical expertise*. Suggestively, the definition is made of terms taken from a technical vocabulary and given with no further elaboration for non-technical readers. Those perceptions are quite important for the study. First, they help a general understanding of the place and role of the Internet technology – and its users – in contemporary society. Second, they open the door for understanding the place of the so-called experts, e perception in favor of "technicism."

A User's Perspective or User in Academia

The turn to the user is "a feature of broader discourses" (Mackay el at., 2000: 737) that continue to grow as the Internet keeps growing and becomes more sophisticated and as designers and producers are more interested in understanding the functioning of those technologies, clearly depending on users' perceptions and actions. There are two important trends considering users in the academic research: *user configuration* and a *user's perspective*. The first one, originated by the work of Woolgar in "user configuration," involves ethnographic data to describe and explain designer vs. user relations. Imagined user as coined by Woolgar (1991) gained prominence especially with the concern of how the user is *configured*, which is how "to define, enable, and constrain the user." (Grint and Woolgar 1997:71)

The concept of *technology user* is rooted in the model of Social Construction of Technology (SCOT), which opened a new window in the studies of science and technology by emphasizing the human side of the designing process. When SCOT was criticized as "artifact-centered" (Russell 1986, Rosen 1993, Klein and Kleinman 2002)

and with "almost total disregard for the social consequences of technical choices" (Winner 1993:368), the focus shifted to "technology user" (*what people do with a technology*) and many authors such as Nelly Oudshoorn, Trevor Pinch, Christina Lindsay, Ronald Kline, and Anne Sofie Laegran just to name a few, began examining that role. Using ethnographic data, these authors show how "the users of technology" versus "technology" provide for social change. This work also shifted the focus from the "producers of technology" (Hughes 1989) to the "users of technology" (Kline and Pinch 1996:764).

Studying the effects of technology on people's lives is, however, not a new subject. Since 1952, Lauriston Sharp's *Steel Axes for Stone-Age Australians* aimed to explain significant social changes in the Yir Yoront group's life and culture associated with the introduction of the steel ax. Cowan's *The Industrial Revolution in the Home*, is also a classic example of the unintended consequences of technologies. Cowan claims that the promises surrounding new technologies of the American home environment at the beginning of the last century have never fulfilled (1999:296). Neither Cowan nor Sharp used the word *user* in their writings. Instead, words such as industrialization, family, work at home, chores, the housewife, paid and unpaid servants, and guilt set the stage and make the article a true representation of its own time. In this context, the term *user* would have been over-generalizing and misleading. It would have hidden the drama of the housewife's identity and obscured the gender underlying the drama in a process during which the "new" technology in the house was understood with prestige and value.

However, differently from any previous attempt, the idea of *technology users* constructed a user as actively and creatively using (and even changing) a technology product.

The work in the field shows that the meanings and issues surrounding users are quite complex. For example, the User (I am using the capital U conventionally) appears crucial within Rapid Application Development (RAD), a software that is developed based on the so called "user's requirements" (Mackay et al 2000). What makes RAD important in our terms is the peculiar status of the user who buys software (usually tailored based on a given situation/scenario) in software developments. In RAD's case, the user is a representative of a software buyer who becomes a member of the team design, present from the onset of the project. Differently from Woolgar's approach[27], in which the designers configure *user*, in RAD's approach, the designer-user relation appears much more complex. The power of program designers is circumscribed by their own organizations as well as the user who makes the designers feel "disempowered" in their relationship to customers for the reason that the designers must follow the user's needs and explanations. Importantly, the study finds a multiplicity of configurations versus user configuration as coined by Woolgar and Grint (1991).

The Non-user or User as an Outcome

As discussed here, the term *user* changes meanings based on a described situation. The intrinsic symbolic nature of a user as a category suggests an analytic and reflexive

[27] Configuration approach is criticized by both Mackay (2000) and Higgins(2007) as adequate for only certain situations.

versus descriptive understanding. Unpacking the term becomes crucial for understanding related meanings as well as for building a user taxonomy in the field. Unpacking the concept of user also becomes important for enabling an adequate methodology: How to define user, non-user? Where and when are these terms applied? So far in this discussion, the image of user or users has appeared as the one of an individual in touch with technology. As the study proves, users, as well as non-users, are socially constructed – produced, legitimated, and delegitimized in practice – depending on specific settings and occasions. Previous research and analysis (Kling 1996, Waytt 2005, Downey 2008, Winner 1997) provided interesting yet somehow limited explanations. Here I will also discuss how an analysis of the non-user category opened a new line of the inquiry, one that links the software production with its consumption in education.

Since early, Kling has already criticized some generalizations that focus on user as part of a design noticing that the idea of user sometimes is "merely a convenient linguistic fiction which helps simply syntax and implies a kind of homogeneity and consensus which makes a system design appear legitimate". (1977:44) Instead, user should be understood in a context. The same could be said for non-users. Both concepts, when taken for granted, can be misleading.

Wyatt makes an interesting point when she explores and describes the Internet non-users by focusing on the evidence of non-use of the Internet in some countries where "non-use could be a choice". In her taxonomy of the Internet non-users – "resisters," "rejecters," "excluded," and "expelled" – the *resisters* are the people who know and who can use the Internet but they never did and they do not want to; the *rejecters* are the

people who were once users and dropped voluntarily for different reasons; the *excluded* are the people who never had access to the Internet and never did use it; and the *expelled* include the ones who become non-users involuntarily. (2005:73)

Further on, Waytt calls for an exploration of the non-users as a category of its own and for "what [that] means" for the studies of science and technology. Wyatt highlights the importance of incorporating non-users in the technological studies, yet sees it as problematic. Accordingly, it is hard to locate the formation of people she describes as "invisible actors" or "incoherent group." Meticulously, Wyatt observed that, "[t]he use of information and communication technology …is taken as the norm, and the non-use is perceived as a sign of a deficiency to be remedied or as a need to be fulfilled", which speaks in favor of what can be described as glimpses of a *culture of using* reinforcement, the further exploration of which became enlightening for the study. (74-78)

Wyatt's perception of non-users as a group is not in isolation. Langdon Winner also describes the so-called *Irrelevant Social Groups* in his article *Upon Opening the Black Box and Finding it Empty: Social Constructivism and the Philosophy of Technology*. The article came at the time when SCOT was considered as a school of thought, describing the shaping of an artifact by differences in understanding by the so-called "relevant social groups," yet failed to recognize what Winner describes as "groups with no representation and groups who remained silent for political purposes during a technological development" (1993:364). Clearly, the grouping idea is closely related to that of relevant social groups. However, the *irrelevance* here is also described mostly as a *disconnection with technology*.

Downey enriches this distinction in terms by what he describes as "producing a user." In *The Machine In Me*, Downey states that, "A human's first step in getting to know CAD/CAM technology was to become, or, better, produces a user." (2004:145) If one wanted to use CAD/CAM technology, the first step would be to be able to get accepted by, and latter connected to, the network. By *producing a user* the author emphasizes the human-system interaction as a premise during which one becomes a user (and non-user). Because the concept of user is usually taken for granted and seen as equal to a person, the concept of "producing the user" made a difference. First, as the words imply, the user is not just any person in contact to technology. Instead, a human can simultaneously become user and non-user in the process depending on the person's knowledge, skills, and confidence and also on technology developments. Second, observing how a user is produced helps configuring the human relationship constituted through technology processes. Producing a user remains important because it implies *a process*, which takes energy, time, and space; it involves patterns of behavior; and it requires a shared understanding, effort, and goal. It is the process during which people do something with and through the system that needs further observations and understanding.

What remains contested is, however, the concept of users and non-users as *a priori* categories. Apparently there are no clear lines between a user and a non-user. The data of this study show that instead of technologically, users and non-users are socially produced with non-user, furthermore, not necessarily as the opposite of user. Rather than consolidated groups, Latour sees users as formations in regard to a certain technology.

(2007) It is during technological processes that artifacts, people, language, and rules are transformed and affect each other's transformation; power is produced and certain human relations are established.

It may seem that within technology design and consumption, when a user is configured and produced, a non-user can be at least described as *a discrepancy* or systemic *performance failure*. In reality, user, and non-user, is made in process and many times from and into each-other. Blackboard non-users describe a deskilling situation in the software updating. The borrowing with no further elaboration and the static use of certain categories can lead to an already-criticized understanding of technology and humans as two disassociated categories. Deploying technology as such sometimes obscures the fact that a user should be defined related to technology features, or technology evolution, and not to technology itself as a static entity. That is what would distinguish, for example, me, as being an outstanding user of Blackboard 7.0 from me becoming a non-user of Blackboard after it was updated to version 8.1. This definition of a non-user also highlights the usually obscured links that connect a user with the work and ideas of many.

Technology: User in Making

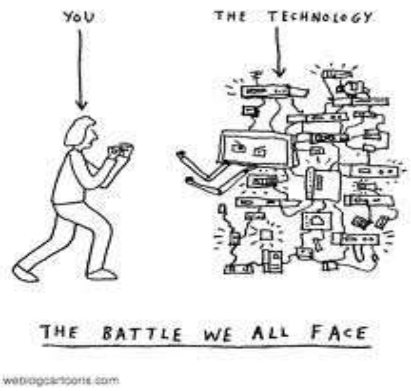

Figure 2-6: Social issues are often seen as technology issues

By focusing on Blackboard technology, this study was designed as an inquiry on eLearning technologies as they continue to evolve in a higher education setting. A discrepancy between descriptions on Blackboard as a simple tool or user friendly and a reality filled with learners' confusion and disappointments, made both user and user issues major concepts within technology. In a contemporary public discourse, technology is used as an epithet for artifacts ("things" "gadgets" "products") or processes and techniques (learning, data monitoring, or browsing.)[28]. Technology is also used as an epithet for the devices related to the Internet. In research and academia there is still a discussion on how to define technology; a discussion which became relevant here especially in regard with the technology of software that appears with some peculiarities. First I will focus on the concept of artifact as a production of human efforts and creativity, its social construction as well as symbolic nature.

Artifact

An artifact, or technical object, is a purposely human made or shaped object. Generally speaking, an artifact is a social object. An artifact is a social object not only because it involves human energy, work, technique, knowledge, and materials, but also because most of these human activities are socially learned, achieved, and recognized;

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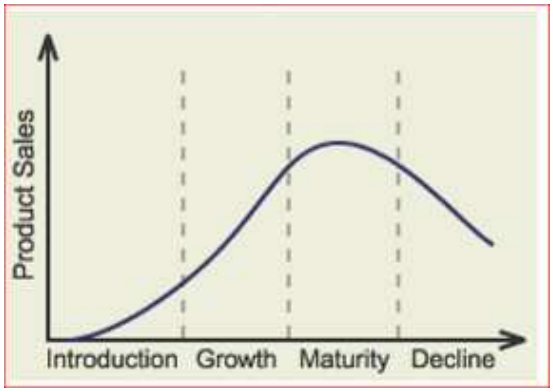
[28] To get a real sense on how people define technology, I googled the word technology and chose three random articles from Forbes magazine, The Guardian, and Huffington Post as following:
Robert Glatter http://www.forbes.com/sites/robertglatter/2014/01/12/technology-in-the-crib-the-smart-baby-onesie/ Retrieved on 01/12/2014
Derren Brown http://www.theguardian.com/technology/2014/jan/12/derren-brown-me-and-my-tech Retrieved on 01/12/2014
Matthew Lynch: http://www.huffingtonpost.com/matthew-lynch-edd/the-call-to-teach-the-rol_b_4583536.html. Retrieved on 01/12/2014

artifacts are imbued with meanings that can affect social identities and statuses. Artifact is a material production of what Pfaffenberger describes as “human technology activity”. It is of a material nature not because it necessarily takes a special location (songs don’t), but because it exists objectively. Technique is an “effective act” that comes into play in “the fabrication of material artifacts.” (1992a)



Capture 2-1: **The software lifespan**

In the modern economy artifact is not quite a popular term. Instead, because most of the time artifacts are produced for the market, they are usually called products or goods or commodities. As human made products, artifacts possess both market and social values. A market destination for technological products is a widely known and accepted concept in the modern American society. It should be highlighted that in economics term, a market value, as explained by Marx, is created during production and transportation yet matured during market exchanges. In other words, a commodity gets its potential market value when produced and transported yet its real value becomes a reality in the process of exchange. According to Marx, in a capitalist production commodities are objects of

fetishism: human relations appear as a relationship among objects. This implies the deep symbolic nature of artifacts. For this study, it became important to clarify why and how software is a special commodity.

The Artifact of Software as a Commodity

The production of the LMS software appears with certain characteristics that derive by the nature of software as a product as well as its consumption for and in education. Generally speaking, software is a cluster of codes and algorithms that require what is recognized as engineering work. As a computer application, the existence of software is restrained by the developments of the Internet and computers. A software updating is a known concept not only by the engineers and developers but also by the so-called users. In a personal communication with Vaslav Rajlich, the author of *Software Engineering The Current Practice*[29], I was exposed to the concepts of *software lifespan* and *evolution of software* as they show on Capture 2-1 and Figure 2- 8, both parts of a Rajlich's presentation on this topic. Rajlich explains that similarly to a product lifecycle, software has a lifespan. During its lifespan, software goes through what engineers consider a software evolution, which involves engineering changes that aim at the adaptation of the software application to the ever-changing user, environment, new features, and the correction of mistakes and misunderstandings in software production and consumption. Those changes are in response to both developer and user learning and to changes in related technologies as well. A software program usually grows during the

[29] CRC Press. Taylor and Francis Group.

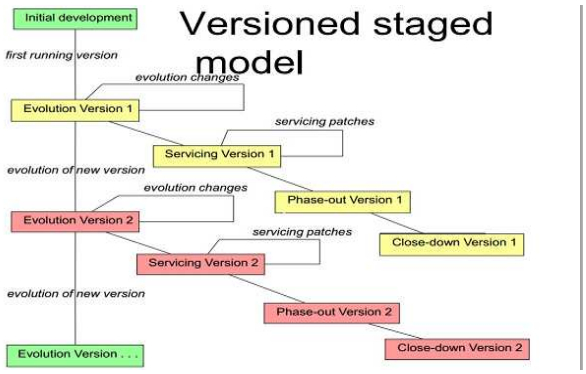


Figure 2-8: The versioned staged model of software

evolution. Technologically, as Rajlitch stated, it is both the software architecture and software team knowledge that make evolution software possible. The software evolution, however, would not be successful without users' feedback. Figure 2-8 shows the so-called versioned stated model, or a model that explains the engineering changes from the initial developments to the close-down as software evolves from one version to another one. Note that evolution and servicing are two kinds of changes within the same software version. There are however, different kinds of updating versions within software. An interesting software change is the Servicing Patches closely related to software maintenance. During this phase, there are no additions to a software functionality and the changes are limited to patches and wrappers.

In a commodity market, the phenomenon is known as a production lifecycle, or the cycle during which a product gains market value until because of a decline in its social value, it diminish way[30]. The lifespan of software, even though appears as a property of the engineering world, is a commodity property. The engineering work during

[30] The term is borrowed with some changes from Appadurai's *Social Life of Things.*

the evolution phase aims to expand the social life of software in market. This has a few implications. First, software is a product in making; the consumption of software appears as an extension of software production. During the consumption, software keeps evolving and improving its market value. Second, as Rajlich recognizes, the so-called users become part of those changes regularly through their feedback. The so-called users are also a source of feedback, which leads to improvements of software. Third, as already stated, the nature of software allows for a collective work that requires no physical presence in a specific location, time, or under any managerial directions for that matter. This has made possible that some software to appear as non-market products or as common peer-production; products that are different from the market productions known to dominate a capitalist economy. Apparently, the properties of software have blurred the boundaries between production and consumption as known. Therefore, the collective work devoted to the software consumption and which involves the work of people who takes care of software testing and updating is left unrecognized.

Technological Systems

According to Hughes (1989) a technological system is a system of changeable elements incorporated on the same purpose. The technological systems are made of "messy, complex, problem-solving components" such as physical artifacts, organizations, scientific artifacts, legislative artifacts and natural resources. In these terms, within an institution of higher education, Blackboard software constitutes a physical artifact among other related artifacts such as Internet, computers, and other software. Some artifacts,

such as online classes, knowledge database, incident tickets are artifacts made by a direct involvement of Blackboard. In this picture, the ones that Hughes calls “scientific artifacts” is made of principles of software applications such as mathematics logarithms or codes but also of learning theories. (41-42)

The legislative artifacts, on the other hand, usually appear in the format of contracts. It should be underlined that there are two important entities involved in Blackboard technology: one is the Blackboard producer called Blackboard, Inc. and the other one is the Blackboard consumer which, here, is a higher education institution called the University. There are contracts between the University and Blackboard, Inc., contracts between certain units and individuals within the University, as well as contracts between the University and other companies for services they render to the University. There are also protocols, procedures, and job descriptions that are officially recognized by the University. However, Blackboard Inc. also produces its own related legal artifacts. Some of them, made of patents, licenses, etcetera, affect the software therefore its outcome at the University. Natural resources made of land, buildings, power also get involved in both settings. Apparently, it would be impossible to study/discuss an artifact such as Blackboard software and not consider both, Blackboard Inc. as its designer and producer and the University as a consumer or client as well as a (re)producer.

System and its Environment

In his explanation, Hughes describes a technological system as a system of changeable elements; some of which are completely under control but the rest are not. A

system is built as such that all the components involved are adjusted to each other by their own contribution "to the common system goal". Hughes states: "If a component is removed from the system, or its characteristics change, the other artifacts in the system will alter their characteristics accordingly." The technological systems are also associated with the so-called *environments* or a set of "intractable factors" not under control of the system managers. During time, Hughes wrote, systems have the tendency to "incorporate the environment into the system" for eliminating "forces of uncertainty". This explanation, however, is not an adequate fit for the LMS software for a variety of reasons. (52)

Systemic Issues

In this respect, those systems, and into that category Blackboard LMS too, are always in peril of what Hughes describes as *reverse salience*, or systemic issues. Those are the issues that many times are described controversially either as user's fault, ignorance, or laziness or technology's (miss)functionality. According to Hughes (1989), technological systems are "bounded" by the limits of control exercised by both artifactual [*sic*] and human operators." (54) If some of the artifacts are somehow manageable, it is not the same for *users*. Accordingly, humans are "components of the system" yet no artifacts, as "they have a degree of freedom". Hughes writes that, "There is a tendency within the system to bureaucratize, deskill, and routinize [*sic*] in order to minimize the voluntary role" of humans in the system. The issues are quite a bit different with LMSs such as Blackboard. Blackboard users/consumers are also the Blackboard operators. The

problem is that this kind of operators is not under the jurisdiction of Blackboard producer.

The discrepancy between what is considered a well-educated learner yet unskilled user becomes problematic and challenging, especially, as the study explain, with professor-users. As an example, for a learner, rather than an individual choice, Blackboard becomes one of many institutional features – things that no one gets officially penalized for ignoring it, yet associated with emotional, prestigious, and sometimes material and monetary incentives for the ones who get involved. In addition, Hughes writes that, "[S]ome system builders have designed systems that provide labor with an opportunity to define the labor component of the system. The voluntary action does not come to labor as it functions in the system but as it designs its functions." (1989:54) Also, a crucial function of people *in the system* is "to complete the feedback loop between system performance and system goal and in so-doing to correct errors in system performance." (54) The peculiarity of software, however, is such that implementing, maintaining, updating and troubleshooting the platform depends on the designer partially only. Once transferred into an institution's jurisdiction, the duty for maintaining the software most of the time belongs to the institution rather than Blackboard Company. Literally, there is no Blackboard without the labor of people who keep the software working and alive 24/7. This is how LMS software functions and this is unavoidable.

Team Work

Hughes also wrote that, “Modern system builders, however, have tended to bureaucratize, deskill, and routinize in order to minimize the voluntary role of workers and administrative personnel in a system.” (1989:54) At the University, there is a group of people who are organized under a technology related division and who are in charge of updating, troubleshooting, and maintaining Blackboard so it functions with limited incidents. Those people, who usually do not write codes and do not teach, bring altogether knowledge, experience, and skills from their own areas of expertise significantly enough for keeping the system going. The work they do, and for what they get paid for, it may look simple: they take care of software. In reality, however, their job is of quintessential for both Blackboard Inc., and the University: One, by testing, giving feedback, solving issues, sharing knowledge, and training people on how to use software, they add market value to the software/company itself who improves software based upon this kind of knowledge/feedback. Two, not only does this particular group help on what can be considered as Blackboard domestication, but also they maintain the system’s performance with effects on both individual and University’s performances. A daily working routine of such team is fulfilled with devotion towards both software (their job) and the image of University (that pays for that job). At the University, a similar team that it is called here Blackboard team has taken a negotiation role that visually may be described as a negotiation between technology and users, yet analytically it concludes as an institutional negotiation among different levels of learners in the process of becoming users.

As Chapter IV will explain in details, the organized human labor is an important yet missing variable in the studies of educational software. What has been discussed in details on other kinds of technologies, it remains hidden in the field of LMS software. For instance, Pfaffenberger considers technology "in concert with social coordination of labor" and with a "social dimension". He wrote, "Sociotechnical system…refers to the distinctive technological activity that stems from the linkage of techniques and material culture to the social coordination of labor." In addition, he considers the role that "ritual institutions play in the coordination of labor and the network's legitimation [*sic*]." (1992a:500-501) Those observations became very important in understanding the inner working of LMS.

The Understandings of Technology

From the time of Industrial Revolution, the peculiarity of the so-called technology has been elaborated to the point that the human side of it, and the processes of transformation involved, has become blurred, hidden, and sometimes misrepresented on purpose by certain groups with certain interests on channeling technology developments for a profit of their own. The last part is what gets highlighted in this study. It has become an adequate issue with the Internet based technologies in general, and especially with the eLearning software: First, because an operation of eLearning technologies (as already explained) does not require a deep knowledge on its working principles, making it easier to glorify technology on the eyes of the millions, and then utilize that glorification to manipulate human technology choices. Secondly, millions of people of all ages who

attend education every year, and operate learning software, get exposed to related issues and the unknown consequences. Thirdly, being part of the nation's strategic plans, developments of eLearning technologies in education affect society as a whole now and in the future.

There are different approaches on technology. One is what Pfaffenberger considers as the standard view of technology, which is when technology developments are seen as a "social necessity", "human progress", and "in linear development."(1992a: 493-495) It is a meta-narrative of technology used in many scholastic settings that aims showing the developmental stages in human society. It has taken place in a public discourse fueling a large misunderstanding that "newer is always better". A second approach is what Winner (Pfaffenberger 1988a) considers as technology somnambulism or the approach that ignores technology and technology developments considering them as natural and with nothing special to offer to social studies. Sometimes, technology implementations and developments are wrongfully seen as an ultimate source of change which speaks in favor of what is called technicism or technology determinism; the approach that underestimates or ignores the sociality of technology; its symbolic and reflexive nature; and especially any political intentions beyond.

A more recent view on technology is the one that considers a constructivist approach of technology; or the approach that considers technology as a human affair imbued with political meanings and uncertainty yet "readable" and with economic and social outcomes. This approach that appears as a prolific zoo of ideas and methods well known under different labels such as Technological Drama (Pfaffenberger 1992b), SCOT

(Pinch and Bijker 1984), ANT (Latour 2007), user-configuration (Woolgar 1997), user perspective (Oudshoorn and Pinch 2003). By focusing on the human side of technology and on the configuration of human relation through technology, the research under this big umbrella has achieved important results with social benefits especially in the field of computer and programming design or in the medical technologies. One, technologies are inherently symbolic: what looks as "technological" and natural is an expression of political affairs. Two, human agency and human relations have an undistinguished role in shaping technology. An impact of constructivist achievements on the field of the eLearning technologies is, however, still to be seen.

In opposite of what I would describe inclusively as sociality of technology, a term coined by Pfaffenberger (1992a) and by which, as stated, technology is understood as an expression of human life and affair, appears the belief that describes technology as an ultimate, and even threaten, transformative social power. What can be described as technology fetishism basically stands for technology developments described as scientific therefore unchangeable[31]. The group who makes a fetish of technology considers technology good and powerful as long as making a profit out of it. In these terms, technology effects are usually described in superlatively positive terms until they "become" completely "horrible". Technology is also described with an extreme transformative power until it is discard as useless. Those groups refuse to consider the

[31] The term is originally coined by Marx as a fetishism of commodity. Similarly, Pfaffenberger discusses a fetishism of technological object.

human factor in technology work and any unseen social consequences associated with technological changes.

None of those understandings stands on its own; both represent differences based on the political views of people who embrace or study technology for different purposes. In both perspectives, technology content fits the law of nature, creativity, materialistic forms, as well as it requires specific human knowledge and skills. There is a deep difference, however, when describing technology transformative powers. The sociality of technology approach considers an understanding of human relationship through and beyond technology; it evaluates technology effects in a context simultaneously social, economic, and cultural, emphasizing political intentions. Importantly, sociality of technology expresses a philosophy that not only understands technology in its complexity and as a human affair, but also finds social configuration as crucial in a technology success/failure. In opposite, a fetishism of technology is the philosophy of neo-liberals who demand an involvement of technology as a means for their profit yet with no regard for human consequences. In these terms, a technology is good as long as bringing the highest profits, but "a failure" when the profit shows no significant progress.

An exaggeration of the positive technology effects in society developments is not a production of any innocent admiration of engineers for technology, even though their love and enthusiasm for technology innovations may have been used as a cover for it. Instead, technology fetishism as a philosophy is strategic. It further takes advantages of that public (miss) understanding of "newer is better" associated with the standard view of technology discussed above. The associated language, as shown on the second article in

this chapter, is tricky: It aims to emphasize superpower by contrasting the so-described 'magic' effects of a technology by its simplicity or even beauty. This philosophy, and a related discourse, is in the roots of a neoliberal strategy that aims to channel social benefits of technology in favor of the privileged a few, who feel owning the technology, owning knowledge, making capitalism work. The phenomenon, as described by Robinson (2004) in his theory of globalization, aims to extend the profit-making practices in the fields such as education and health care by extending technology services there. It is also intensely discussed and denounced by a group of authors in the field of education (Apple 2005, Burbules 1999, Torres 2000, Monahan 2005, Blackmore 2000.) who insist that the association of eLearning technologies with a corporate mentality is proven distracting and not in the same line with the empowering role and the function as a public service of education is society.

Technology as an Assemblage

For this study, technology is a human activity organized for achieving a certain goal involving certain artifacts and techniques, as well as a shared body of knowledge and skills. It is a process that involves work (the making, modification, usage); it involves knowledge of tools, machines, programs, and techniques as well as social skills for creating and keeping new social connections; it employs methods and rules of organization, as well as certain skills. Importantly, the activity is highly characterized by a shared understanding, language and symbols; an enforced that rather than voluntarily sharing. Here, technology is defined as an assemblage for the following reasons: First, it

aims to emphasize the heterogeneity of technology. Second, it aims to highlight human ability for organizing all the elements for achieving a certain goal. Third, it aims to provide for a discussion on the collective and symbolic nature of technology. Importantly, the term allows for sorting out work – an important yet forgotten element in some technologies.

In these terms, the interest of the researchers has been multiple facets. Some of them have been more interested in knowing what is involved in the processes of technology and how to understand technology/innovation developments on a social fabric, bringing the idea of social-technological systems (Hughes 1989). Some others have been more interested in understanding how artifacts get shaped in the process (Pinch & Bijker 1984). Some others have placed value on the political roots of technology and follow a symbolic discourse in technology making for emphasizing technology as a means of a larger social-political discourse (Pfaffenberger 1992a, 1992b). Another trend focuses on the profound social nature of technological processes, considering the equal role of human actors and actants in the networks (Law 1989, Callon 1987, Latour 2007). Another trend focuses on the so-called technology users (Woolgar and Grint 1997, Akrich 1992, Oudshoorn and Pinch 2003) who consider an artifact and its use with a focus on how users are impacted by technology and how they, in return affect its changes. They are all united by the idea that the configurations of the elements of technology are “readable” and they can be followed and “translated”.

The Characteristics of Technology Assemblage

A technology assemblage – content, human knowledge, skills, techniques, as well as energy, materials, tools, machineries, and rules that get adjusted and re-adjusted for a shared purpose – is characterized by some features that make the assemblage unique in terms of its content, place and time. It should be emphasized that the configuration of the technology elements is not given or static, yet it is not chaotic either. It evolves under a particular set of rules that defines the technology assemblage. A technology assemblage is holistic; what seems as simply technological is of a social and transformative nature. Also, a technology assemblage is inclusive in two aspects. Firstly, the elements of assemblage are transformed to meet the shared goals under a technology. Secondly, the developments of a technology assemblage are affected by a set of rules which permits, or constrains, production, transformation or manipulation of things[32]; permits, or constrains, association of meanings, signs, symbols, or signification; determines "conduct of individuals" and submits them to "certain ends of domination"; permits, or constrains, individuals to transform themselves in order to attain what is (culturally) defined as success.

Apparently, to understand a technology and its developments, one should pay attention to the configuration of the assemblage elements and especially to the set of rules that drives it. This vision is built on what Foucault describes as *Technologies of The Self* (1998) and which includes the technologies of productions, the technologies of signs, the

[32] This is built on Foucault's definition on "Technology of production", which, here is understood as collective knowledge and skills that permit production, transformation or manipulation of things. In reality, however, permission and constraint are cultural by nature and exists in a dichotomy; mastering a set of skills creates restrictions on different set of skills.

technologies of power, and the technologies of self. This structure emphasizes the social and holistic nature of what may look as simply technological. It also emphasizes the importance of culture into technological developments as a shared set of rules, beliefs, and norms that people hold true and which underlie – and affect – the technological processes.

The study of Blackboard technology holds true that the set of rules affecting technological developments of Blackboard software is of a capitalistic nature; it puts value on production for a profit; and the production of signs, power, and self-evolve into the same capitalistic structures. It is under the conditions of capitalism, when production is mainly organized for making a profit, that the concept of power becomes significant and requires further elaboration. Foucault develops the concept in more fine details, considering the technology of power (or how along with "things" and "signs", the set of rules aims to guarantee the production activity, maintain social order, and establish social statuses) as one of the four technologies that construct social life.

Organization of production is associated with the production of power and an organization of structural powers. For this dissertation, it was important to understand and document the construction of powers inside educational system. In the study of Blackboard, power became a synonym of user network and networking, a concept taken from Castells (2008) and which will be fully developed under the globalization part. Power also became a synonym of institutional power considering the conduct of individuals such as professors, students, and administrators within institution. As the data shows, many of the administrators do what they do not because of any individual love or

hate for Blackboard, but simply because for many, if not all, that is a job they do for a living. Then it is their job to train others to become technology users. It is a job they mostly do well and with pride, again, because that is what they are assigned to do within the system. As the data prove, the role of educational institutions and their networking power remain crucial on what is described as software's social life.

It is also under the capitalistic conditions that the production of things is associated with a certain set of meanings, signs, and symbols. As an example, it is in those processes that one of the LMS software got named Blackboard, after a simple hardware traditionally used for teaching and learning. By naming their product Blackboard, the owners wanted to give their product the image of a simple and easy tool, similar to the social image of the black board used in the traditional classroom. Not only are the meanings, signs, and symbols produced and shared in the same processes with the production of things, but also, and quite often, they are used manipulatively to socially accept those things, and by social acceptance I mean a shared understanding that certain "things work[33]."

The fourth technology is what Foucault considers as technology of the self. Most of the Blackboard and IT Help Desk technicians at University achieved their technology knowledge and skills as part of their jobs. It was during work that they established certain relations with each-other, with individuals they did serve, with their working space, and especially with technology. However, the same remains true for faculty and students,

[33] Law and Singleton (2000) elaborate in details how human conscience and stories become part and affect the success/failure of technology.

who in the process of teaching and learning transform themselves – their own knowledge, skills, and the relations with each-other as well. Foucault's vision is important for understanding how socially shared ideas, beliefs, and norms affect our individual lives and decisions. By elevating the idea of technology from a simple process of producing something, into inclusive and transformative processes that aims a social cohesion of society, Foucault's view made it possible to build a system of linkages with Blackboard software in center and culture, users, and globalization at the other ends.

Culture: The Mapping of User

Introduction

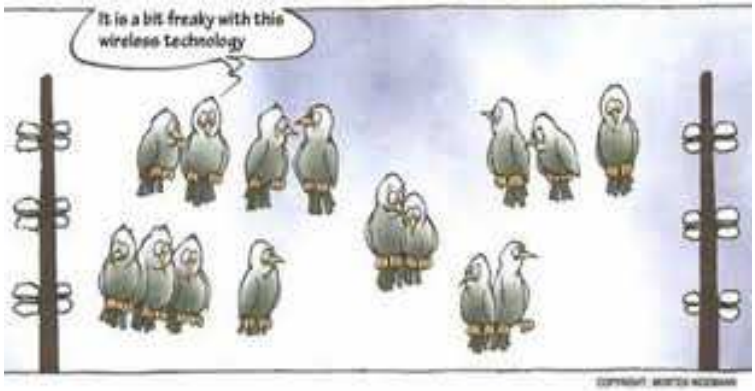


Figure 2-9: Culture affects technology construction and resistance

As stated, the contemporary *user* is culturally associated with the developments of the Internet and related technologies. There are several reasons on why culture along with its characteristics were utilized in this study: First, the concept of culture became important for understanding the cultural configuration of the emerging social, technological, and economical conditions associated with the developments of the

Internet in the American society (therefore a configuration of labor, power, and learning). Second, the concept of culture became important for understanding the nature of work and human relations during Blackboard performances. Third, a cultural understanding became an important instrument for decoding a symbolic discourse associated with the Internet technologies in general and Blackboard in particular. Importantly, a cultural analysis became crucial in decoding and rebuilding the concept of user.

Culture and its Characteritics

Culture itself appears as a messy concept. To simply say "culture" does not render any help as culture appears in multiple discourses, with different meanings. For instance, Pinch and Bijker (1984) consider science and technology "socially constructed cultures". Stephen Kern has titled his book *Culture of Time and Space* (2006) considering a cultural construction of time and space. Jeffrey L. Meilke also delves in culture change and uses it as a strategy when researching for his book *American Plastics: A Cultural History* (1995), realizing that plastic appears to bear different connotations during time. In a public discourse, culture is either related to fine arts, good education, and well-cultivated manners or just associated with the idea of "others", which, generally speaking, conforms no more than just a popular acceptance of "many ways of living". This, however, does not indicate that culture owns a solid place in the collective human knowledge. An anthropological perspective understands culture as deeply involved on how things are understood "here" and "now" and with impacts on human thinking, feelings, and actions. Culture means diversity and is considerably involved on how human world is waved, and changed as well.

Summarizing culture, and research on culture, in 2-3 paragraphs it remains sketchy and never an easy task. When there is no attempt to exhaust the idea of culture and cultural forms, this study involves an anthropological perspective on eLearning technologies, learner, and learning; it implicates the cultural forms of work, production, consumption, and policies in understanding the latest developments of technologies in education. In this doctoral study, culture makes an essential understanding of underlying human differences on: how human needs are defined and constructed, how people produce certain technologies, make them work, and with what goals in mind, how different strategies are built for both, helping a technology being socially accepted or for rejecting it, and especially how human relations, and power, are built in, and how technologies are understood, implemented, acquisitioned, operated and continuously changed in process.

For this study, culture is "a society's shared and socially transmitted ideas, values, and perceptions that are used to make sense of experience and generate behavior and are reflected in that behavior." (Haviland et al. 2013:163). As a group's mark, culture provides its members with a system of evaluation that grows unconsciously inside an individual, furnishing him/her with right and wrong doing perceptions, as well as reflections. It has been long recognized that all human societies share some kinds of traits, institutions, and patterns such as language, grouping, rituals, beliefs etcetera. It is also cultural on how humans perceive concepts such as work, production, or learning, achievements, success etcetera.

Generally speaking, culture appears with a set of its own characteristics – culture is learned, shared, adaptive, integrated, holistic and symbolic – all important within an anthropological understanding. To say that culture is learned, or not genetically transmitted, it means that people learn, share, communicate and evaluate ideas, behavior, situations, and skills as members of certain groups during a certain time; which explains Jenkins' versus Chubb and Moe's different visions on educational technologies as differences among groups within education. Even though culture is socially transmitted, it is only in the process of a collective living and working, when change, and adaptation, takes place. Learning and sharing of culture, as well as its rejection, change, and adaptation, are never smooth, natural processes. Social norms and beliefs are forcibly imposed in society, by certain laws and rules, and/or by social sanctions as well. For individuals, or groups of individuals, who don't comply with the imposed norms there laws, but social punishments and sanctions as well, with the last ones not necessarily economic. In addition, the web of culture makes it difficult to address issues when they are widely presented and accepted as values. As an example, if education is seen as a social value, anything assumed to fix any of the recognized issues within it is imposed as a social value too. This is how joining a social circle that supports the technologies that "would fix" education can be perceived as a value, when challenging it would mean more than just an individual bravery act.

Cultures are also integrated and holistic as well as symbolic, three characteristics that proved helpful cues for the study. Being integrated means that a change in some of the elements of culture may affect changes in its others elements. Technological

inventions, as an example, are usually associated with other cultural changes; the invention of the Internet makes a good example. However, a closer observation shows that a culture of Internet is mostly assumed. There are no accurate statistics on the number of people who utilize the Internet in everyday routine versus the ones who don't. Using a personal email or Facebook for social entertainment may speak in favor of cultural changes in human mentality, yet doesn't prove that Internet and its applications exists as a culture[34]. This is why a holistic view of technology, as already explained, became handy.

Holistic refers to multiple facets of culture. A member of society, as an example, would be taken into account as a total: biologically, socially, culturally, and as a communication transmitter/ producer. Accordingly, beside its content, a technology should be understood as a human relation and with a political intention; all concepts helpful in understanding the technology of Blackboard. The last but not the least, is the symbolic nature of culture and by symbolic referring to human mediation through signs and concepts. One of the Internet sources states that human culture is mediated through a system of signs and concepts which are not found deliberately in reality, yet "objectively exist until they disappear". Those signs and concepts – symbols – are tacit agreements produced, shared, and even manipulated during collective activities and understanding. Not only did this understanding become helpful in decoding the discourse associated with

[34] The blood feud in the traditional Albanian society is an example of how a belief becomes collective knowledge.

Blackboard developments, but also, and importantly, led to the idea of collective as a necessity when studying technology.

Cultural Forms of Software

Open Source and Free Source are two (cultural) properties that characterize software during a certain time in the history of human society, described by Benkler as networked information economy. (2003) Along with market products sold for a profit, the developments of the Internet have made possible the production of non-market products, a condition that could be seen as a premise in favor of democracy and social justice. As the study data prove, the developments of Blackboard have been characterized by conflicts between proprietary versus open and free source products. Before discussing Free Software and Open Source Software – two legal forms of software – it is important to emphasize that the tensions are a reflection of culturally defined human and business perspectives: a conflict between the collective nature of human work and the individual nature of profit in a capitalist society. The conflict between "*human* cooperation" and "*profit* motive" is described on the FOSS' official website, as following: "*[P]eople in the open source community have been asking whether or not their beloved revolution could survive contact with the profit motive.*" In other words: "*Will increasingly successful human cooperation be able to survive increasingly well-organized human self-interest*?"[35]

[35] http://freeopensourcesoftware.org/index.php?title=FOSS_Philosophy Retrieved on 08/12/2013.

Generally speaking, the concepts of Free Software and Open Source, popular among people in the field, are used confusedly in many forms as *Free and Open Software*, or Free Software, Free Source, or Open Source. The main concepts of Free Software and Open Source, even though can be found together, are qualitatively different.

Free Software

In Free Software, *free* is as in the word *freedom* and not as in *free beer*, professor Spannaus explained for the class of Learning Management Systems, College of Education, at WSU Winter 2012. The concept is mostly rooted in the free software movement, initiated in 1983 by the computer scientist Richard Stallman, who believed that it should be *software freedom* for all computer users[36]. It was a reaction to a culture change in selling computer programs between 1970 and 1980. Before that time, to assure an increase of the hardware sales, the industry of hardware gave away software for free. As a result, the software industry started overpricing its products and made available binary sources only, a practice that restricted what was considered users/developers freedom in knowing and using software. In 1980, the law of copyright got extended to the field of software, marking a war between software users/developers and the tendency for enforcing software proprietary rights. By denying any freedom benefits to the so-called users, the proprietary software, according to the Free Software Foundation (FSF), became "an unacceptable danger to a free society".

[36] As stated, the concept of user has many meanings. In this context, software developers could be a good substitute.

It is worth saying that FSF, a nonprofit organization, was founded in October 1985. In their official website, FSF claims "a worldwide mission" for promoting "computer user freedom" and "defending the rights of all free software users". Accordingly, there are four requirements that determine free software: When users are free to, use the program for any purpose; examine the source code and see how it works**,** distribute the program to others**,** and improve the program. Even though, as we will see below here, clearly, from four requirements, two imply an open source condition, the fans of Free Software, insist on keeping the two concepts – Free Software and Open Source – separate from each-other. They proudly claim Free Software to be *a successful social and political movement* "driven by a worldwide community of ethical programmers dedicated to the case of freedom and sharing". Instead, they consider Open Source to be a development model only, assuming essential differences among the two.

Open Source Software

The roots of Open Source concept should be seen in the complexity of Internet software developments and what has been described as a *hacker culture*, which culminated in 1997 with the publication of Eric Raymond's book *The Cathedral and the Bazaar*. Among many, Raymond wrote, "Users are wonderful things to have and not just because they demonstrate that you're serving *a need*, that you have done something right. Properly cultivated, they become co-developers." Not only made the long essay a revolutionary impact in understanding the folk practices inside the so described *hacker community*, but eventually, and mainly, it helped with discovering the value of the so-called user: the potential *of collective work* itself in software improvements. Raymond

made it clear that users can voluntarily take the role of the co-developers in code improving and effective debugging. When code source is available, users can be "effective hackers", Raymond emphasized. The idea opened a new, important page in software developing and capitalist practices of copyright and use.

In the contrary with the Free Software Foundation, the Open Source Initiative (OSI) registered in the state of California in 1998 as "a public benefit corporation" focuses in promoting "awareness and importance of non-proprietary software". The official website of OSI (www.opensource.org), confirms also an interest on "how Open Source technologies, licenses, and models of developments can provide *economic* and strategic advances". Even though the official website states that "OSI is not organized for the private gain of any person", the statement doesn't necessary denies that the co-developing method can be used for "economic advances" of groups of individuals[37]. Clearly, Open Source and Free Software are built in different sets of values and principles.

Symbolic Discourse

Recent research suggests a correlation among Internet-based technology innovations and the neo-liberal practices in the domain of public services. Yet, little is

[37] The main principles include the following: Educate the public about the advantages of open source software; Encourage the software community to participate in open source software development; Identify how software users' objectives are best served through open source software; Persuade organizations and software authors to distribute source software freely they otherwise would not distribute; Provide resources for sharing information about open source software and licenses; Assist attorneys to craft open source licenses; Manage a program to allow use of one or more marks in association with open source software licenses; and Advocate for open source principles.

shown on what makes those technologies widely accepted and even valued. When a corporate agenda is mostly legitimated and socially accepted, it is even less known on how commodification is inflicted through technology. It remains unclear, for example, how the idea of Blackboard got involved in higher education and made many enthusiasts among the American Higher Education until things recently changed and took a different direction. The interest of this study was to work things out at the level of individual. Metaphorically, the study asked how Blackboard would bring the elephant of globalization on the tiny screen of laptop when one does homework in pajamas from the comfort of a cozy bedroom. Culture here denotes a learned and shared understanding, historically evolving in time and space, which has the tendency to provide and enforce certain behavioral models, by using culturally defined means.

In another explanation, Pfaffenberger states that not only is a design constituency responsible for designing an artifact, but also for "shaping the social context and space" into which a technology "will be projected." Along with designing an artifact, designers/ producers – Blackboard is an example – "try to shape the legal and legislative environment into which they will project their artifacts" (1992b:290-291). It is the symbolic discourse of myth and ritual, however, that precedes and associates those legal actions and changes not only intending a social acceptance of the artifact, but mostly providing for the interpretation of its affordances which is fabricated meanings on how to understand a technology and on what people will be doing with it. Here are some explanations on the already discussed concepts, from a cultural perspective:

Context

Context is multi-facets. Discussing the concept of context under the domain of culture, should be understood as an attempt for emphasizing the ever evolving nature of the context itself. Context appears with different meanings in the studies of technology. In this respect, the discussion developed by Thomas Hughes (1986) is of special relevance. For Hughes, the context of technology goes beyond science. It means primarily the interaction among a "host of actors and institutions" within the system/network[38] itself a seamless web that eliminates categories such as political, ideological, cultural etcetera. As Hughes, however, agrees, technology is shaped by both interaction and differences in the interpretation of technology. The context is closely related with the idea of culture not only because interaction implicates culture, but also because the differences in technology interpretations have cultural roots. By emphasizing the cultural nature of the context, this study aims to emphasize the dynamics of human interaction in shaping technology. Cultural context here denotes the interactions within an educational institution during Blackboard upgrading when differences on how upgrading is perceived mark the differences on each group's accountability as an example.

Meanings

Differences in meaning are the kernel of ethnographic approaches, especially when the focus is on technology. Interpretative flexibility which constitutes one of the key features of SCOT, remains a great tool in understanding technology. Generally

[38] Note that for Hughes the distinction between system and network is not significant.

speaking, differences in meanings are what connects and separates Blackboard from different groups of the so-called users. It is also the molding which helps build a model of social discourse as "the entire field of *signifying*" or "*meaningful practices*" consisting of social interactions – material, institutional, and linguistic – through which reality is constructed and interpreted (Edwards 1996:34). Interpretative flexibility among different groups (SCOT) provides for differences in meaning associated with an artifact, a central concept in understanding technology design.

The concept of de-scription of technical object presented by Akrich 1992) expands the idea further by employing the concept of socio-semiotics – the study of "order building" – which considers meanings beyond language/signs. Also, meaning remains important in the Woolgar's user configuration with "technology-as-text". With "technological drama", Pfaffenberger takes the idea a step further drawing upon a culture's root paradigms. The concept of technology social life employed here attempts an understanding of Blackboard in its "lively" state, which, differently from the studies of artifacts that existed in the past, allows for an ethnographic examination.

Symbols

What can be described as "the social life" of Blackboard forms another essential concept for the study. The term is coined by Appadurai in the essay collection *The Social Life of Things* (1995), who explains there that the real "value" of things is symbolic and socially given to them during the process of circulation. Here it aims recognition of the social nature of values of things/technology but also of its functionality. For example, if the life expectancy of a pair of shoes based on its material durability shows ten years, it

means that physically they may be not usable soon after that time. In economic terms, this is considered *use value*. In a consumer society such as American society, the use value of goods is, however, drastically interfered by fashion and advertising. Here, a pair of shoes that may be "good" for ten years but "not cool" after the first two years, are usually not quite desirable. Therefore, their market value during the "not cool" period lowers drastically. The materialistic nature of artifacts obscures their social nature, the latter playing a significant role in understanding that things have a social life too.

Following Pfaffenberger, who states that artifacts can be fully understood in their own "activity system" described as "complex linkages of knowledge, ritual, artifacts, techniques, and activity" (1992:509), Blackboard also qualifies as subject of symbolic discourse with a social life of its own. The two other categories – myth and ritual – are also of special interest here. In terms of symbolic discourse, LMSs are often described as technologies of the future, empowering students to be successful in a "global competition". This creates a vision for what those technologies are, but also for any potential achievements facilitated or made possible through their use.

Both visions are mythic in nature not because of being false, which may be the case, but mainly because they are built on concepts such as "the future", "empowerment", "success", "competition" etcetera which are proven to bear symbolic meanings within the American culture (Ortner1973). They appear to be dangerous as well, because of their inherent nature in mainstream culture as key symbols. Such symbols, which are understood and shared by many, are presumed to be culturally safe, taken for granted, and rarely, if ever, questioned past this initial stage. As part of a policy

language, they, as an example, can provide enforcement for what Blackmore describes as "regime of the truth" (2000). The related language appears rich in metaphors such as Virtual society, The Internet as a highway of communication, Learning society, Computer as the Man of the Year. Unpacking the symbolic discourse surrounding Blackboard led to a better understanding of the context, in which the eLearning technologies in general and Blackboard technology in particular took roots, grew, and got shaped.

Rituals

Schools are institutions the work of which is built on a set of widely known rites of passages such as registration, the first day of school, graduation ceremonies, student evaluations, student and teacher recognitions, etcetera; all associated with specific meanings and symbols that culturally mark passages from one stage of life to another and help building identities and social statuses. Technology trainings are a newer ritual within educational institutions that based on the study observations, aim a humanization of technology and a network extension. The Internet connections have also made possible to publically and anonymously rate professors and classes online based on their "goodness".

What may look as an innocent entertainment for students who vent their disappointments online and a good catch for a group who makes money through advertising there, it also speaks in terms of a rite of passage in the American higher education. Busch and Tanaka (1996) for example, make use of the case of canola in Canada to show that "grades" and "standards" subject both humans and non-humans simultaneously to rites of passages that test their "goodness". These rituals allow "the

neoclassical market to be established" and "allocate power among human actors"; by recognizing the canola grade, the authors recognize that in reality, the tests passed by canola are tests for both canola and farmers, (non-human and human subjects). Even though as the authors explain the criteria for those tests and their interpretation remain a cultural matter, in reality, grades and standards create the conditions to make things and people "uniform, measurable, and controllable", finally making them "available" for the capitalist market. During the study, was observed more than once how those rituals were strategized and strategically involved in the daily lives of people at the University.

Myth

Myth is an important element in the symbolic culture. In this study, myth is involved as a decoder for the language surrounding Blackboard software and the eLearning technologies in general. An Internet search brings up an interesting definition on symbolic culture as a "domain of objective facts, whose existence depends, paradoxically, in a collective belief."[39] A simple example would be the combination of sounds that make the word *cat* in English or *mace* in Albanian for the same pet. Both words are objective facts as their respective meanings are widely recognized and shared by their respective speakers, yet mostly unknown by non-speakers. Importantly, they will continue to exist as such until they will get lost or replaced. Their existences depend on some tacit collective agreements to call the same pet *cat* by a group and *mace* by the other. Both words are subjectively created. However, they remain objective facts because

[39] Retrieved from http://en.wikipedia.org/wiki/Symbolic_culture on 04/07/2013

of their cultural endurance; they exist objectively regardless any individual consciousness or actions. It is in the process of collective living and work that cultural symbols get created, transformed and even manipulated. One of those cultural forms is called myth.

In a public discourse, myth is usually employed both to show the opposite of a reality or a false claim. In Western literature, myth is significantly connected with the name of Roland Barthes. Its history, applications, and elaboration, however, are considerably larger than Barthes' work. Rather than just a linguistic structure, myth is closely associated with meaning, discourse, decoding, and systems. Barthes' myth adds there the concept of ideology and invokes attention to the natural appearance of what can be described as "contingency". Myth became significant for the study because it helped extracting the meanings associated with Blackboard technology in its context.

Myth remains a cultural instrument in understanding a social discourse (Lincoln 1989). In a narrow sense, the word *discourse* refers to human conversation. Social discourse, however, refers to "the entire field of *signifying*" or "*meaningful practices*", which is social

Figure 2-10: Negro's French Salute

interactions – material, institutional, and linguistic – through which reality is constructed and interpreted (Edwards 1996:34). Myth then is a way of understanding that reality; a tool for deconstructing the signification of those forms and showing how the reality is expressed and should be interpreted.

In Barthes' explanations, myth[40] is *communication* (a type of speech and a message), *system* (a semiological system, a sign with a specific form, and content), and *strategy* (signs with political connotations). For Barthes, myth is perceived through meta-language, is of naturalized ideology, and is transmitted usually through collective representations forms of mass-media and art. Myth appears in a natural format, something that makes common sense and as such, implies no opposition. Thus, myth is meant to be perceived (note the difference with the word *understood*) with no difficulties by people; the ones, who, at least, understand the language. To decipher myth, then, means to deconstruct the history beyond what looks/sounds natural, understand the motivation in which myth was created as a strategy, and explain it in context. As an example, the article of Chubbs and Moe may probably make sense for people who do not have any knowledge on the political developments within American education or the language used by neo-liberals that aim a political change in education in favor of the rich who find the involvement of technology a safe way for building a new empire of profit in a public domain. The task is never easy, nor spontaneous. It requires training, skills, and immersion into the web of meanings as part of which a myth grows and becomes a representation.

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[40] Roland Barthes' myth as described in Mythologies is usually considered a unified theoretical concept for understanding a variety of French cultural products (e.g. a car advertisement, wrestling, soap-powder, toys, and etcetera). His concept, the theoretical aspect of which is the focus of the discussion here, is much larger and widely referred by different fields of academia. In this respect, Barthes' approach appears multi faceted[40]. It is considered being a "structuralist attempt" (De Man 1990), "semiotic" (Culler 1997), and part of "the critical theory" (Edwards 1996). Some of the Barthes's work is discussed in the same line with the work of Derrida and Foucault known as prominent authors of the deconstructivism school[40] (Noe 2001). Rather than focusing on any particular theory, the main focus here remains on the ideas of meaning and decoding as they appear in *Myth Today*.

By following Saussure's theory of sign, Barthes considers myth a sign of "the second level of meaning" created in a historical process, which itself gets then "frozen" and appears in a natural, unquestionable, highly-encoded form. For Saussure, a sign is a group of letters/sounds that takes meaning only when associated with an object in nature. This would be the r-o-s-e group of letters that all together mean the flower we call *rose*. However, for many people roses mean love, a meaning of this of the second level, created into a historical process as a story now shared and known by many. In the process, which starts linguistically, at the first level flowers (an object/thing) are the *signified (what),* the word rose (learned and shared) is the *signifier (how),* and the rose flower is the sign (by what). At the second level, the sign (rose flower) becomes the signifier of passion/love which is then signified. The complex process of meaning creation is called signification. The meanings, usually as tacit agreements, are created, and learned, in and through a context shared by many.

"Statistically, myth is on the Right", wrote Barthes. (1972:148) For Barthes, myth on the Left is, however, either "inessential", "tactical", or "at the worst", of a deviation. Myth on the Left is "a myth suited to a convenience, not to a necessity". In contrast, myth on the Right is always strategically deployed and aims "to keep reality without keeping the appearance". In Barthes' theory, myth is naturally "bourgeois", "strategic", and created for the replication of already established forms. Deconstructing it was exactly discovering "the truth" or demystifying the myth, and exposing people to reality. Barthes' analysis on myth attempts to expose the mechanism of collective false beliefs and ideological abuse. Lincoln (1989), however, makes some important

elaborations and modifications on myth. Thus, Barthes' reasoning remains threefold: How this mechanism mediated social problematic; how myth-consumers interacted with; and what that meant for mythologists. He described the role of ideology as one of transforming "the reality of the world" into an "image of the world." (1972:154) By displacing the concept of the myth toward reality constructivism rather than just deconstructivism, Lincoln builds myth as a strategy versus myth as a false reality versus nature. (1989:5-8)

By considering Barthes' point of view as "somewhat romanticized", Lincoln argues that, "[c]hange comes not when groups or individuals use "knowledge" to challenge ideological mystification, but rather when they employ thought, including even myth and ritual, as effective instruments of struggle." Second, Lincoln considers society as a "synthesis" constructed in the process. In this respect, the discourse along with force is both "the chief means whereby social borders, hierarchies, institutional formations, and habitual patterns of behavior are both maintained and modified". Rather than producing just knowledge, myth aims to produce certain attitudes. The picture of the Negro's French Salute (Figure II-11) was created to give hope that things were better in the French Empire as long as the message was perceived as simple news and with no further analysis. This is what Lincoln considers "human sentiments." (1989:8)

CHAPTER 3 : METHODOLOGY

Figure 3-1: A native is not always the expert

Introduction

The study is designed as a multi-sited ethnography focusing on the developments of Blackboard software from a user's perspective. It aims to deconstruct the idea of LMS technology and explain its social significance in American higher education. The outcome of the study is based on two full years of intensive Internet research on eLearning technologies in general and Blackboard in particular; one year of participant observation at the University, a conventional name for an American higher educational setting that had already implemented and continued to maintain Blackboard Learn as a platform for teaching and learning during the 2012-13 school year; and my own personal experiences with online teaching and learning.

By putting Blackboard user at the center of the ethnography, the study aims at a cultural account of the processes and the context during which University learners

become Blackboard users. The data collection involves two sets: one based on research from the Internet and the other collected from participant observations. The first set includes Internet information on LMS technologies that dates mainly between 1997 and 2013. Although the articles date mostly from the past two decades, they trace the history of group users in education back as far as the 1950s. The material is collected from multiple related Internet sites. Such documents appear in the forms of text, pictures, graphs, screen captures and transcripts from several official websites (Blackboard's website, Moodle's website, EDUCAUSE website, the University official website, Chronicle of Higher Education, and Wikipedia), blogs (eLiterate and various personal blogs), online chats from Moodle and Slashdot as well as listserves, news, transcripts of different videos from YouTube and Blackboard TV, articles, and a large amount of reader comments on these works. The total volume of material used in the study exceeded 500 printed pages.

The other set includes data collected from the participant observations at the University: official documents and manuals of use, procedures of operating, daily logs, observation and interview notes from the team in charge of testing, updating, and troubleshooting Blackboard – and maintaining its users – at the University setting during the 2012-13 school year. Because of the software peculiarity – an invisible technical object with no clear boundaries between production and consumption and with no clear definition between users and non-users – the initial design and some of the main concepts, including the one of natural setting, were problematic and had to be redefined

during the process. Here, I will discuss some of the related dilemmas, issues, and questions, as well as the methodology of the study and its dynamics.

Dilemmas, Issues, and Questions

The study has been a distinguished learning experience as well as a journey of personal discovery. It started as a concern about the discrepancy between how Blackboard was officially described and how faculty and students felt about it. Early in the process, I was only curious about why different people had different perceptions/feelings about Blackboard technology. Later on, when I achieved a better understanding of the dynamics of technology and culture in general, Blackboard was no longer just a matter of curiosity. I felt obligated to many colleagues and students to unpack the operating practices of Blackboard technology and to uncover the social significance of the technology.

I started with a mind full of concepts from the readings and with a good anthropological training, yet with a limited experience in ethnographic research. I was eager to learn this form of research and to use it to discover something beyond the surface of the operations of Blackboard. From the beginning, there were three crucial issues to be solved: how to *operationalize* Blackboard software or, paraphrasing Russell (2002: 47), how to reduce the complexity of the Blackboard LMS to a set of measurable traits; 2) how to situate the Blackboard user; and 3) where to start.

For an appropriate design, I began with a two-fold plan: I set up a Google alert with Blackboard as a keyword and also selected a set of readings from published work on

the topic of social constructivism, later adding significant readings on globalization and social discourse. I received Blackboard-related news via email every time a new article appeared on the Internet. Through my readings, I was able to conduct an analysis of the published work in the context of this study using some well-known models including SCOT, ANT, user's perspective, technology drama, and respective criticism. The whole idea of constructivism, as well as related concepts and arguments, set the stage for my analysis, yet none of them proved completely satisfactory for this study. There were three big questions in my mind the entire time: "What does that mean?"; "How do I know that things are the way they look like?"; and "So, what?" These questions formed triangle of self-analysis rather than of self-constraint, but they did not allow me to apply any of those models to Blackboard technology with total satisfaction.

A good research design on technology is never of a cliché. It builds and grows based on the context of technology. This notion is already recognized by the researchers in the STS studies. For example, Russell states in one of his critical comments about SCOT: "Our approach to understanding a technology will depend on the sphere in which it is or could be, introduced and developed." (1983:338) The concerns of my colleagues and students with online education made me conscious about the changes, and the effects, associated with the involvement of eLearning technologies in education. The design of this study took a different path than the models addressed above so that it could include these learners' perspectives while examining the impact that eLearning technologies may continue to have in the field of education.

Why Blackboard?

Blackboard was not chosen just because it meant a lot to me, although I have spent quite a bit of my life on Blackboard. When I decided to study Blackboard technology, I wanted an explanation for the concerns that my colleagues in education, and my students, have expressed about the software. Some of the discrepancies in the field (already stated in Chapter I) further triggered my interest. I decided to put Blackboard in the center of the study because I realized that Blackboard was in the middle of a public storm triggered by the moves of Blackboard Inc., an indication that there was something to gain from an analysis of this technology.

As a doctoral student in Anthropology, I realized the great potential for exercising my ethnographic skills and knowledge. The problem, however, was on how to study a technology spread across thousands of universities and colleges, countries, and continents; how to find the best ways of surfing the related discourse; how to model the connections, relations, and associations among people, things, and rules involved in the so called Blackboard LMS; and definitely how to make sense of all of this data.

Preparing for the Journey

As an anthropologist, I already knew that I needed fieldwork, people skills and connections, and linguistic knowledge. I sought to understand Blackboard through the eyes of its users, which made a university setting appropriate and ethnography a good method. The plan was to go to a school that uses the platform of Blackboard, meet with people there, immerse myself into what can be described as a Blackboard culture, and find related clues for understanding the software technology.

Generally speaking, an ethnographic approach has been productive for others in the field. For example, to answer the question "Where does one go to learn what one needs to know to confidently write about philosophy and technology?" Winner evaluated the experience of Mostert who "not only [went] to the library to study the history, engineering, and the economics of supertankers but also [lived] in a tanker himself during several voyages." (1993:363) Latour and Woolgar elaborated upon this approach even further by advising a researcher to "follow the actors," indicating a fluid, un-rested setting. (1985) I insisted on the idea of viewing a technology through the eyes of its users to emphasize my intention of humanizing LMS technology and understanding its social consequences, ideas introduced to me through reading Winner (1993), Russell (1986), Pfaffenberger (1988), and many others in the field.

Specifically, when I stated in my study proposal that I wanted to ethnographically study Blackboard, I wanted to emphasize that my ultimate aim was people and human relations beyond technology. The idea of being *there* and observing/interviewing the users sounded noble until it became problematic: How should I define *there* in the case of software? Who is the *user*? On the top of those questions, what is the native language of software? Mathematic? Electronic? Symbolic?

Stepping Back

I had to rethink my initial set of questions: What is Blackboard? What does Blackboard mean to people? What are people's concerns about Blackboard? What does that mean? Rethinking these issues, however, mostly meant prioritizing them

strategically. I also asked: Is there a specific place in school where I can find answers if not for all, at least for most of the questions? By sharing my intentions with others in the University, one group stood out as a key site for learning about the developments of software, the learner's concerns with software, about the learner's feelings and thoughts about it, and about how the software was organized in the school. This group was one within the University focused on taking care of updating and troubleshooting the Blackboard software while maintaining Blackboard users.

The next step was a transformative thought from searching to find a Blackboard native language into the search of a shibboleth. Is not the language of natives a powerful tool when exploring a tribe? How should I understand the tribe of Blackboard? What language should I consider? Perhaps under the influence of some of the Internet comments that ironically state things like "teachers know nothing about software anyways…," I somehow thought, "Fair enough. I can learn *that* language…" That is why, in parallel with some of my graduate courses in technology and culture, capitalism, globalization, or methods in Anthropology offered by the Department of Anthropology, I took a mix of graduate courses in the College of Education. There, I learned a lot on how to use quite a few programs developed for teaching and learning online, but was not taught any specific language. Through these courses, I learned in depth about both the concerns that educators have related to their job of teaching and the threat of the impact of their teaching credentials by the technologies expanding in education. Along with an enthusiasm and passion for teaching, I saw confusion and disappointment.

I always remember Hughes, who once stated that some social scientists go so deep with their (social) claims that they forget about technology content itself. I kept looking for a language, and skills, that would have made me an expert in the content of Blackboard. The truth is that each time I wanted to learn a little more about *technology*, the "non-technological" became unavoidable. Things were so mixed, ambiguous, and twisted that there was no other way but to understand them as they evolved without labeling them in advance – something already discussed by the STS researchers.[41] For example, regardless of how Blackboard was described in the official documents, numerous Internet articles or online chats showed that many *hated* Blackboard. I found out that compared to similar products, such as Moodle, Blackboard was considered "bad," "junky," "buggy," and with a kind of "oldish 80s interface." Technically, I thought of these LMSs as similar to each other (were they all not just eLearning tools?) or at least with no significant differences, once one becomes familiar with that type of technology.[42] The study became more confusing as more data kept poured in. Locating the shibboleth became crucial. By shibboleth here I mean what Latour (1998) describes as "what makes people do things" within a technology: a clue that would allow for Blackboard to be understood as a LMS technology but allow it to be seen as unique from the rest. This

[41] The Heterogeneous Engineer

[42] I do remember driving for more than two hours back and forth to meet with a graduate peer who lived in Howell, Michigan, to ask her why she described of Blackboard as inefficient. She then responded that Blackboard had an interface that reminded her the early 90s face of LMSs. When I asked her honestly if she saw a problem there, after a short pause, she said that probably there were no issues with that, adding that she was not very familiar with Blackboard during the time of that comment. Just the initial impression of the interface was enough to distance this potential user.

notion is similar to what Foucault describes as the technologies of the selves: What makes us do what we do? And why don't we all do the same?

How to get there?

The idea of locating a shibboleth was more than symbolic. Not only was my beloved tribe of users, as I thought of it, just scattered all over and speaking in many different languages (which it was), but also each of the tribe members could potentially become a technology *zombie* – another word for non-user –as technology kept updating. On the top these issues, I also had to become the "translator" since taking the ethnographer's seat. It became clear that the shibboleth I was looking for was present; to find one, I had to be able to first put a rebus together. Obviously, the issues with Blackboard were much larger and deeper that the ones experienced in online classes.

One summer, for example, I became a trainer for the University's summer program and shared my experiences with others interested on teaching online classes. Some had strong concerns about what would happen with their own courses: who would be able to accesses them, how they would know that the students who took the test were not cheating, and other legal and ethical concerns. Quite a few wanted their conditions to be sealed in a contract with the University, before even having to teach an online class. Although I never thought about Blackboard in these terms before, those were real concerns coming from learners, concerns that would not appear if one were only examining the content of the Blackboard software.

Besides my own experiences with Blackboard through online teaching, the designing online courses, and related trainings, I conducted some preliminary work by screening the official website of Blackboard Inc., reading related blogs, watching related videos on YouTube, reading articles from Wikipedia and Chronicle of Higher Education, and keeping track of any news items related to Blackboard. I skimmed through all related news sent to my email by a Google alert for quite a few years. I saved the pieces that were closely related to Blackboard technology and began to immerse myself in what could be described as a Blackboard discourse. From this point, I followed online comments and websites that, as I will explain in the next chapter, helped me draw connections, find group formations, and find meanings.

Additionally, some of my online students felt "cheated" by the publishing companies that sold them expensive texts with passcodes that redirected them from our Blackboard class to a company's website or that locked their computer's IP address so no more than a student could use the passcode. "This online thing is all about money," some of them complained. Each of these episodes, made me think that there was more happening with Blackboard than I was able to see, that the key to understanding the technology was not necessarily in its technological content. My search for the shibboleth extended from the content of the software to the human relationships connected to the technology. I turned my attention to what makes the human relations beyond Blackboard technology good enough for the software to be socially accepted by so many, yet unique enough to be criticized so fiercely.

Helpful Models

The study design remains deeply rooted in the constructivism approach, the understanding that technology is a human endeavor with certain and uncertain effects in society nevertheless subject to being shaped by human interactions. The research under the constructivist umbrella has been proven productive in humanizing technology. As stated, ethnography has already been established as a successful inquiry method for understanding the social significance of technology in its own context. As the technology of software appears newer and not fully-explored, ethnography seems to be an adequate model for its study. It still remains common for a society to share what Pfaffenberger (1992) describes as "the standard view of technology," a view that identifies technology in terms of necessity, functionalism, and progress, which grounds itself in a collective belief that everything "new" has a purpose, is necessary, and is necessarily better. In these terms, fining a clear path to analyzing Blackboard became difficult. Unfortunately, the language of policymakers also appears entwined with this standard view of technology, making the situation even more complicated. An anthropological approach gave me the right tools for understanding and analyzing this situation, allowing me to move back and forth between perspectives as needed. The section below explains the changes from the original design of this study.

Based on preliminary observations of Blackboard learners/designers, I initially planned to approach Blackboard either as a tool, a platform, or a place. I proposed to study Blackboard through its changes by considering what can be described as a metamorphic mode and by emphasizing what can be described as Blackboard alternations

– software, networks, and online classes. The study was going to use the following theoretical models as the framework for analyses: the model of SCOT was to be used for identifying the social construction of Blackboard software as an artifact; ANT was to be used to understand the Blackboard platform within university network; and a user's perspective was to be used to understand human-technology interaction in online classes.

Blackboard as an Artifact

In these terms, SCOT's main categories – interpretative flexibility, social relevant groups, stabilization/closure, and the wider context – were all important for the study in question, even though each had its own weight. SCOT has been widely criticized for not recognizing the groups described as "non-relevant," namely those groups that have no voice or remain apolitical in the process (Russell 1986, Winner 1993), for neglecting the wider context and the effects of structures (Klein and Kleinman 2002), and for not understanding the hybrid nature of elements that define technology (Woolgar 1996). SCOT is also criticized as "artifact-centered" and with no sensitivity on "what comes with [it]." (Winner 1993:384)

The weakness in the concept of *social relevant groups* was to be corrected in this study by adopting a deep understanding of learners *versus* users and allowing for the last group to be defined in the process. At the beginning of my research, I thought that an artifact becomes an object of social interest once it is no longer in the designer's possession (thinking of an object produced for consumption). The data, however, proved that the boundaries between designers and users are not quite clear; designers are users

and users can also become designers and all participate in the making of Blackboard. In addition, a closer look showed that there are no clear boundaries between production and consumption of this software as a product.

SCOT claims to present a "truthful" description of an artifact with a special interest in explaining the social factors that shape technology. The idea of an artifact here, however, grew much larger. Generally speaking, during all stages/alternations Blackboard was to be explored through the perceptions/beliefs/actions of people who currently used, or once used, or planned to use the technology in a daily routine. This, for example, brought into play the Technological Drama model of Pfaffenberger with an emphasis on political actions, yet with a specific attention on myth and ritual. Pfaffenberger's model triggered the idea of technology and collective work, which proved essential to the study. This led to questions such about how Blackboard users are configured, how Blackboard users are engaged, and even how Blackboard users are produced/performed, which set the ethnographic tone of the study without displacing attention from Blackboard transformations. At the end of the process, the intent of SCOT remained, but the study no longer depended upon that model for analysis.

Blackboard as an Electronic Platform

As LMS software, Blackboard is a system of its own. When implemented in a school system, Blackboard also becomes associated with an established network. Schools are networks of their own. I found it necessary to understand the role of Blackboard within that network while studying the components that are adjusted by and through

Blackboard's presence. In this respect, I thought the model of Actor-Network (Latour 2007) would be useful for translating the complexity of the connections among actors and actants and the linkages between. In addition, the model seemed a reliable instrument for detecting non-users as a formation instead of a group of its own. Latour's theory also considers the global and the local, two concepts already important for the study. Latour's Actor-Network model, however, provides for a framework in which technology appears as the developments of the linkages among humans, actants, and rules. Instead, in my study, Blackboard software developments and user network look as almost two different concepts, until the concept of power gets involved.

As a technical object, the preliminary observations have shown Blackboard as an extended (virtual) space of sorts for human interaction, but also a kind of virtual organizer (storage) that becomes existent through text and only through people-people, people-technology interactions and performing roles. There, people and technology take on specific roles and places within the network. No interaction would be possible without a fine-tuning between technological properties, knowledge, and set of human skill; the "invisible" software becomes visible only within the structures of networking. In my proposal, I wrote, "Otherwise Blackboard remains merely a script (literally), which will be fully understood only when as Akrich (1992) stated, the configured user confronts the real user**.**"

A network configuration with the involvement of Blackboard software and its users became fruitful for the study especially in the context of networking power (Castells 2000), expressed as a power of the institutional alliances, connections, and

affiliations. In this picture, Blackboard technology, appeared as a means of networking rather than a networking generator. This is why it became important to have both an inner and outer context of Blackboard. In these terms, I kept Hughes' model of systems, sub-systems, and reverse salient for explaining the inner context of software working. Yet nothing was simply technological (if that exists!). Thus, an analysis of networks and power became helpful in analyzing the context in which a technology and the use become commodities. These new concepts were all checked and redefined to fit the case.

Blackboard as a Place

In online classes, Blackboard is often addressed as a place (Go on Blackboard... Upload your document there Access the test by clicking on the link). An analysis of human-human and human-technology interactions was used to add insight into what goes on between humans and technology in that type *of place*. Blackboard becomes a "place" when its technological features are made available to teachers/students, which takes place when they have institutional access or are assigned to an online class. *Blackboard performing*, a particular and located enactment or performance of technology knowledge and practice (Law and Singleton 2000:767), is needed for successful teaching and learning. It is in the course of this process that the user (and even the non-user) is produced and reproduced.

In terms of users, my proposal stated:

"At first sight, Blackboard users seem to include all categories: administrators, teachers, and students alike. From a legal perspective, however, a school – which holds the

contractual power – may also qualify as a user. To make a distinction among various users, I plan to label University as "the big user" (in absence of a better term), online classes as "real users," and class participants as "end-users." Blackboard software participates in the University's heterogeneous networks and brings together actants of all types and sizes. Online classes can then be considered nodes of the school network because school policies, rules, tech support, access, and so forth set up a preconditioning.

However, online classes appear heterogeneous, complex, and with a life of their own, which allows for considering them conditioned by the school's network, in view of the fact that each online class has its own policies, rules, and specific human-software dynamics. The students and teacher/teachers that participate in online classes "bring" to the table their own past experiences, norms, beliefs, and skills that may support or constrain the learning activity all at once. For the purpose of this study, teachers and students were seen as end-users. It is there in the online class where performances will be observed and users/non-users will be created."

Although the study was ambitious, the initial plans were unnecessarily large. The ethnographic data collected during the participant observation at the University IT Help Desk (in all three tiers) shed light on the processes during which these teams update, test, and troubleshoot Blackboard and the meanings associated with these acts. During this processes, the Blackboard user (and even the non-user) is produced, and maintained, by a collective effort and through an institutional commitment. When this understanding became clear, and confirmed by the other set of data collected from Phase 1, the

participant observation phase ended with no need to continue with the other proposed steps/stages (although institutional permission for these steps/stages was granted).

Helpful Ethnographies

Each of the ethnographies I have read has somehow informed this study. Some of them stand out because of what they were able to transmit to me as a reader. Quite a few became helpful by reminding me on what not to do in my study. Three ethnographies became especially handful for this study: *Globalization, Technological Change, and Public Education* by Torin Monahan (2005), *Global Technology, Local Babies* by Marcia M. Inhorn (2003), and *Global Technography: Ethnography in the Age of Mobility* by Grant Kien (2009).

Monahan's multi-sited ethnography takes place in the Los Angeles United School District. From a "globalization on the ground" perspective, Monahan investigated the implementation of technologies in a public school system. His ethnography displays the contrast between the global symbolic nature of technologies in education as means for "global connectedness and student empowerment" (2) and the practices with those technologies in the local classroom. Monahan claims that the new technologies implemented in public education are not keeping their promises. Instead, they are pushing the education down the path of "reproducing values and social relations that meet the needs of global capital" (6), a concern of my study as well. Monahan takes, however, a "layer-approach," studying the Nation-State, the City, the Organization, and the School, instead of the systemic approach to the dynamics of networking used in my study.

Both approaches make it possible to perceive *the local* in the frame of the global, and vice versa, when investigating how neoliberal ideology and practices are used strategically to help capital expanding into the public sector, how technology is enforced in the system through policies at different levels, and how its implementation is contested and resisted. Similarly to Monahan, my work focuses on the social life of Blackboard software and its political economy. However, my study takes a different path: It focuses on the Blackboard LMS as part of the technologies that enable online learning with an emphasis on the networks that create and support these systems. My study emphasizes the work for implementing, updating, and troubleshooting Blackboard and maintaining its users.

The ethnography of Inhorn places a globalization question in the context of poor, non-western Egypt of the mid 1990s, when she observed issues – cultural, social, and religious – with reproductive technologies experienced by infertile Egyptian women and their families. Those technologies, usually considered value-free and inherently beneficial medical technologies with the ability of being transferred and implemented everywhere, appear in reality "subject to challenge" when "local formulations, perceptions, and actual consumption are taken into consideration." For Inhorn, reproductive technologies are globally spread. Yet, the messages associated with these technologies are domesticated, being interpreted and incorporated according to "local values." By considering the "new" reproductive technologies as an artifact of globalization, Inhorn shows that globalization is not culturally homogenizing. Her fieldwork in Alexandria, built on the Appadurai's concept of "technoscape," shows that

even though the medical practices confirm what medical manuals predicted, women's narratives demonstrated that their emotional, social, and financial sufferings are impacted by the local values, beliefs, and practices. Inhorn's study is more about culture diversity as a response to a cultural homogeneity assumed by globalization. Even though Inhorn considers globalization from a different angle, her emphasis on the culturally diverse understandings and experiences of technology was enlightening. From that perspective, I put a strong emphasis on a local understanding of Blackboard, on a work team, and on the institutional impact on technology success.

Grant Kien poses an interesting question in his book *Global Technographies: Ethnography in the Age of Mobility*. He asks: "How can one define a field when the users and technologies are constantly in motion and intermittent, and when the nature of network itself has changed from the central-server model to distributed networking dependent on the active involvement of the users themselves?" (2009:14) Kien develops a whole new approach that connects what he describes as users, technology, and networking – three concepts important for my study. By considering "users and technology in constantly motion and intermittent", and "networking dependent on the active involvement of the users themselves," Kien manages to draw the trajectories of mobility by following what can be described in Downey's terms as "a man with technology," Kien manages to show that outside of a human-technology dichotomy, technology itself would make no sense and humans would never be the same. The ethnography shows how the so-called mobile technology defines a way of living in modern society. It is the mobility of humans and the mobility of the networking in which

the cell phone and the laptop play an active role, as do human sentiments, thoughts, and feelings – important clues for my study, which also considers both the role of networking and the sentiments, thoughts, and feelings of learners as decisive in a technology's success or failure.

The Study (Re)-Design

The ultimate version of the study design was finalized during my fieldwork. Three important findings were consolidated during Phase One: the peculiarities of Blackboard software and software technology, Blackboard as a proprietary product versus open-source and free software, and a historical perspective of the connections, affiliations, and relationships of intuitions within American Higher Education, corporations, and the American government. The data obtained show the organizational forms of the networking, which started as networks of users, yet became networks of power. The themes were confirmed by an additional literature selection that offered clues to the technical and economical conditions of software production, the nature of work in the conditions of software production and consumption in education – a missing variable in my previous design – and the production of power through networking. In light of the new findings and sources, the data started to fit better into my theoretical framework. The focus shifted from the Blackboard software/technology to Blackboard as a production of networking from a systemic perspective, exploring the issues produced by the system's inner workings.

I was led by a simple question: What allowed Blackboard, a simple software initiated by two college students with no respective credentials and aimed at educational

consumers by two entrepreneurs with no previous experiences, to spread out into the field of American Higher Education with what can be described as a financial bloom over a decade ago before changing course? This question became more than just intriguing, considering that products similar to Blackboard were already implemented and functioning within the American higher education system.

At that point, I stepped back to reconsider the biographies of the Blackboard co-founders in their own words. I also reexamined the press releases and related public news from the beginning of Blackboard software and from the merger of Blackboard LLC and CourseInfo LLC. Since Blackboard LLC began as a "firm contracted by the non-profit IMS Global Learning Consortium," I followed that line of connections, leading to a mapping of links including National Learning Infrastructure Initiative of EDUCAUSE, Cause, and Educom through their own histories. This journey also led to the IBM 1401 Users Group with IBM as the supporting roots.

Somewhere in this map of connections, the American government was affiliated through its generation of funds to support the field. I followed the connections, affiliations, and relationships that extended this technology network as previously discussed. This line of questioning led to a retrospective link showing how Blackboard was implemented at University. It should be added that a further historical search on the IBM 1401 Users Group gave me another perspective on the concept of user as consumers. With this perspective in mind, I reevaluated the second part of my design by considering what the Blackboard team at University does for maintaining Blackboard and what that means in terms of the users. A new set of links showing connections,

affiliations, and relationships was captured, described, and analyzed within the University and through a hierarchy of institutional powers.

An important note: the idea of networks did not discriminate the connections, associations, and relationships even when they excluded each other. I followed the principle of reflexivity (Woolgar 1989) by considering their co-existence under the same social order. The differences between Blackboard and some other LMS stand on the fact that if Blackboard developments were explained through fine details, the information on others, such as MOODLE for example, was limited only to that respect.

The Study Techniques

The data collection of the study consisted mostly of text. The study techniques and strategies were chosen accordingly. The design consisted of two big steps, described by Russell (2002:462-476) as the Exploratory and Discovery Phase and the Confirmatory Phase. For each phase, a set of techniques were deployed aiming to identify categories and concepts that emerge from text, link them into substantive and formal theories, and confirm the existence or absence of themes. The second phase was built upon the results attained during the first.

Exploratory and Discovery Phase

Exploratory and Discovery Phase, which is how Blackboard technology and Blackboard user are presented, advertised, but also criticized and rejected. The main idea during this phase was to discover patterns of thoughts and behavior in a set of texts produced by the collection of related official documents, a set of videos collected from

the official website of Blackboard, and related articles and comments. It should be emphasized that my focus during that time was on Blackboard software; anything related, regardless if it came from its proponents or opponents became part of the collection with no discrimination and was later sorted. This phase conformed to Grounded Theory. (Bernard and Ryan 2010:205-286) This was an iterative process during which I felt more and more grounded in the data, which, in this case were the descriptions of Blackboard software and users as they were suggested by Blackboard designers and producers or described/criticized by its opponents. I started by searching and collecting a set of different types of official documents: company's philosophy, company's mission and goal, bios of key people, press releases, how-to videos, and advertisements. Along with text sources, I produced some respective transcripts or took notes while watching videos. In addition, I completed a graduate degree on Online Teaching, during which I was practiced and attained working skills on strategies for teaching online learners on Blackboard and other LMSs such as Moodle.

The first phase involved *inductive coding*, which for the study means in vivo coding or a highlighting of actual phrases to name/identify the themes. Although I had some previous knowledge and skills in using ATLAS.ti, I decided against relying upon this system. After I read the text collection several times, I realized that some of it (especially the comments or the chats in online forums) were imbued with meanings. The comments were panoramic; I was able to draw scenes, scenarios, characters. It felt like I was participating in a reality show. The information gathered there was extraordinary and enjoyable. I felt that using them as "clean text" in ATLAS.ti, would "corrupt the site" and

lose meaning. So I did the in vivo coding by reading the text collection in a hard copy. I highlighted phrases and words as I read the text. Then, I sorted out big sections of the text. Later, when the themes became clear, I reorganized the sections according to their respective themes. In this process of selection and organization, I was able to identify a large number of themes. The ones more relevant to the goal of this study can be described as: issues and discrepancies, work and organization, user competency/incompetency, networks and networking elements, institutional power, community, symbolic discourse, money making, human moods (feelings, sentiments, fear).

Confirmatory Phase

The second phase, or the Confirmatory Phase attempts to show how Blackboard and Blackboard technology features are perceived, utilized, and experienced by different learners. During this phase, a new set of data was established from the fieldwork at the University, the data collected in the process of participant observation at the University. The data, collected through observations and interviews, displays learners' perceptions, beliefs, and experiences. I then created another set of texts from the observations, the interviews, and official documents, starting with the official University philosophy, mission, goal, policy, student code of conduct, description of the IT department structure, details of the main programs, job descriptions, accreditations, and other institutional documentation of postings displayed in public places like the Teaching Commons, IT Help Desk, and other places where I attended orientations or faculty trainings). I coded this new set of texts for the presence or absence of already-identified themes. Then, I

created a unit-of-analysis–by-variable matrix from the texts and codes used the relationships among categories to build an adequate model, which was constantly checked against the data. Finally, I used exemplary quotes from the interviews and excerpts from different documents to present the results of analysis.

The second phase involved the deductive coding, checking for the existence or absence of the codes/themes already confirmed by the end of the first phase and displaying that quantitatively. During this phase, a new set of texts was deployed for deductive coding. The positive side of this design was that the data/codes produced during the first phase established a secure ground for the second one, increasing the researcher's confidentiality and saving time. However, at one point, I went over the whole text and did consider a final coding. There were no significant changes noticed besides considering the level of details for each situation. Interestingly, there were clear semiotic connections among all the data; regardless whether people were located in New York, India, Australia, UK or here in Detroit, the conversations – online or in person – fit together nicely. Not only is there no apparent misunderstanding among people involved in the discussions, but also there are vocabulary similarities and patterns among discussions regardless of their virtual or natural setting.

OTHER DESIGN ELEMENTS

Inclusion and Exclusion Criteria

Initially, the study was set to involve people who were somehow affiliated with the University (working, teaching, studying there)**,** who were over 18 years of age, and

who currently used Blackboard, had used it at least once in the past, or planned to use Blackboard in the future. No one was excluded from the study based on race, gender, religion, ethnicity, social and health status, and sexual orientation. The study was designed not to consider the following: participants who speak a language other than English**,** or any related documents, social media, and information in a language other than English, or any related visuals and recordings other than the ones in the public domain or the ones conducted by the researcher.

Snowball Sampling

I had three goals in my mind during the study: To describe what I saw, to translate what I experienced, and especially to maintain a good relationship with my study participants. I used my personal connections for the recruitment of participants in this study. After the IRB approval, I emailed one of the Blackboard team members who I have known through online teaching, told her what I was doing, and asked for help. From the readings, I knew that an initial contact would be a key in this process. I was anxious when I received the first email from Cornelia, the supervisor of Blackboard team. To my pleasure, I felt welcomed. After, I was introduced as "the anthropologist" to all of Blackboard team members, to two supervisors of the Help Desk team, who introduced me later to the rest of their team, and to the system administrator, I began working in a cubicle in the area where Blackboard team was located. I was also given access to their listserv. I was invited to and participated in different social events where the number of

people who I talked with was almost three to four times larger than the number of the participants in the study.

I received IRB approval for recruiting up to 30 study participants including students, teachers, and administrators. I maintained close contact with, interviewed, and observed the whole team of Blackboard support (one supervisor, three employees, and two students), three employees from Help Desk, the Blackboard system administrator, and a faculty who was a winner of Blackboard Exemplary Course Program in 2012 and was appointed by University to work closely with the Blackboard team. All the informants who decided to participate in the study received an informed consent with possible risks, benefits, and confidentiality rules described in detail. They also received the same set of questions by email before we conducted individual interviews. In all but one case, the interviews were based on semi-structured questions and were completed in one or two sessions. However, I met with most of the participants more than once. In all other occasions, the questions were part of the ethnographic design. Mostly, the interviews were within the University setting. With some of the participants, however, I met outside the University territory in different social occasions.

Generally speaking, I approached each of the participants individually. If they agreed, I emailed them the consent, and we set up a day and time for the interview. The first interview was always at their working desk, where I also had the opportunity to observe what they were doing. I usually spent one or two sessions asking the participants the set of the questions approved by the IRB. However, once I sat next to them for observations, we always talked about the work they were doing and their other

experiences and opinions about Blackboard. I felt welcomed by and comfortable with all of these interviewees. Although I had close relationships with many of these participants, I would describe the experience as participant observation with limited access. I had permission to see, hear, and observe everything about many of the participants, but I no access to the work space of the Blackboard administrator for ethical reasons.

I initially proposed to and was granted permission to interview University students in the libraries. However, I ended my participant observations after realizing that all of the main themes of the first phase were found during my observations of and interviews with the Blackboard team.

Avoiding any Potential Coercion

Participation in the study was completely voluntary and was done with the promise to keep it confidential to the extent required by law. The participants always had the option to not answer some of the questions and to review what they had said and remove any specific parts before the notes were inserted in the study. This, however, never happened. There were no recordings during the interviews. I always took notes and typed them in my computer. As promised, I was committed to not expose the identities of the participants or any data that can reveal their identities without their permission. I took careful precaution to protect the participants' identity by using a code made of letters and numbers for one's real name. Also, I was the only one with access to the rough data that I kept at home. It was not necessary to use a master list with names and codes since there were not a large number of participants and I was familiar with all and each of them.

Some of the participants wanted to use their legal names in this study. However, none of the original data that can disclose a participant's identity will be ever used without full consent of that participant after this study.

Data Sources

The body of data in the study was collected from the following sources:

Semi-structured, face-to-face interviews with staff from Help Desk: This method captured the Help Desk staffs' descriptions and perceptions of Blackboard, Blackboard's performance, and Blackboard's learners.

Semi-structured, face-to-face interviews with staff from the Blackboard team and the Blackboard system administrator: This method captured the Blackboard team members' descriptions and perceptions of Blackboard, Blackboard's performance, and Blackboard's learners.

Semi-structured, face-to-face interviews with the winning Blackboard course-designer and professor: This method captured a professor's descriptions and perceptions on Blackboard, Blackboard's performance, and Blackboard's learners.

Ethnographic interviews and observations with Help Desk staff in the Help Desk area: This method captured the routine work of staff at Help Desk and allowed for clarifications from the observed staff.

Ethnographic interviews and observations with Blackboard team members in the OTL area: This method helped to capture the routine work of Blackboard team members in the OTL area and allowed for clarifications from the observed staff.

Observations of student orientation (Blackboard session): This method allowed me to capture the institutional power in exposing learner to Blackboard technology.

Observations of faculty Blackboard training: This method allowed me to capture the institutional power in expanding the network of users and in maintaining users in technology changes.

Observations in different meetings with Blackboard team: By this method, I was able to recognize the organization and work of the Blackboard team in updating, testing, and troubleshooting Blackboard and maintaining Blackboard users.

Observations in the Blackboard updating session: This method helped with capturing the work, organization, and procedures of updating.

Screening of information from the Blackboard Inc. official website (www.blackboard.com). This method captured the official descriptions of the Blackboard software, the Blackboard Company, and some of its key people.

Screening of information from the University's official website. This method captured the official descriptions of the University profile, the Blackboard team profile and working principles, and Blackboard's University database of questions, answers, how-to-do videos, and information.

Screening of information from the official website of Moodle (http://Moodle.org). I specifically used Moodle forums in the Lounge to access the online discussions regarding two particular events: Blackboard patents and lawsuit against Desire2Learn and Blackboard purchasing Moodlerooms and NetSpot.

Screening of information from the official website Slashdot (slashdot.org): The information of this website was used in particular for understanding Blackboard software/technology from the perspective of other designers/users.

Screening Wikipedia for related articles on Blackboard, online education, higher education, art prior Blackboard (which is similar software or similar features), Blackboard patents. The information of this website was used for two reasons: for a general understanding of the above topics and for finding out any additional connections/information.

Screening the Chronicle of Higher Education for related articles on Blackboard, online education, and higher education. The information from this website was used to attain more information on the related topics from faculties and staff in higher education. It was especially used for the sake of the diversity of the comments.

Screening the official website of EDUCAUSE (http://www.educause.edu): The official website of EDUCAUSE became a good source for understanding the developments of American Higher Education that led to ideas such as Blackboard from a historical perspective in both roots: Educom and Cause.

Screening of the official website of the Open Source Initiative (www.opensource.org): The information from this website was used for a deeper understanding of the concept of open source software.

Screening the official website of Free Software Foundation (http://www.fsf.org): The information from this website was used for a deeper understanding of the concept of free software.

Screening and transcribing Youtube.com for Blackboard related videos: The website has a large number of Blackboard-related videos for training and advertising. The information was used for semantic clues in building connections.

Text screening of the official University documents produced to ensure the processes of operating Blackboard software and maintaining it and its user by a variety of teams.

Fieldwork

The Interviewing Process

Of a special value for the study became the moments interviewing the participants of the study. I interviewed in length a total of eleven key participants as following: the Blackboard System Administrator (one participant), the Blackboard team (six participants), and the Help Desk team (two participants). I also interviewed one of the professors who was rewarded by Blackboard for one of her online courses as Blackboard Catalyst Course and who, during my fieldwork, was working closely with the Blackboard team at the University. I also had deliberate conversations with two supervisors at the Help Desk. Some of the interviews were in an ethnographic format. Since some of the participants were interviewed as they were being observed, the questions did not necessarily follow the approved format, although the approved set of the questions was always the kernel of the interview.

Additionally, I conducted observations that lasted from 45-90 minutes, attended meetings that were 1-2 hours long, attended training sessions and workshops that were 2-5 hours long, and went to different social events that were 30-60 minutes long. At each of

these events, I introduced myself as or was introduced as a doctoral researcher, which gave me opportunity to expand my knowledge by asking Blackboard-related questions to other people who happened to be around for the trainings, meetings, or socializing. Even though I have not included any of our conversations in the data, they did help my understanding by posing new questions or new ideas that were later developed. It was in one of those meetings, for example, that I learned two new terms (power users and crucial users) as part of the taxonomy of users. During my fieldwork, I also exchanged numerous individual emails with the participants in the study, clarifying answers or asking supplemental questions.

Online Discussions and Comments

An extraordinary amount of information about Blackboard came from online discussions. At the beginning, I was unsure if these texts would be considered eligible material. As I have already stated, the more I read, the more helpful I found the online discussions posted in blogs and forums. I am aware of the perspectives that consider online discussions as "non-authentic." Some of the individuals online commented anonymously, especially in websites with high public traffic such as the Chronicle of Higher Education. However, the comments proved highly informative for the study were even eligible for the nature of the study itself: the study was open to all who had a perspective based on experience with the Blackboard technology and the study had no intention of discussing gender, age, ethnicity, or other demographic information in

relation with technology, culture, or globalization. The diversity of sources was way more important than those categories per se.

The more I immersed myself into the collection of texts and visuals, more I understood about how people felt about eLearning technologies, about online education, about LMSs, and about Blackboard. Behind those discussions were people, or what Latour considers "spokesmen on behalf of certain group formations." This reading presented people's concerns about technology and also about their own social statuses, financial means, human relationships, and ethics. Although this data is different from what is usually described under the observation category, each of those experiences remained unique. My observations of these comments made me feel as if I were invisibly witnessing another world. In each case – besides the four or five times when I made brief comments – I was a silent reader, which made me feel ethically uncomfortable. I was, however, doing my job similarly to an anthropologist observing in a mall, and that thought gave me some confidence. In addition, I always had the opportunity to communicate with people behind those comments, as I did a few times.

Beyond Clichés

One of the questions of the study was: With the user left to be defined, how will globalization be viewed? In these terms, the study was initially designed based on the thinking of Blackboard software as being in the kernel of a global networking and of online classes as the political space where cultural forms of negotiation between technology, users, and knowledge can be performed and observed locally. Although these

assumptions were somehow accurate, the picture of Blackboard technology was much larger and complicated**;** it required a deeper, multi-level analysis. The analysis of globalization, as already stated, is largely discussed in education by a group of authors such as Apple, Torres, Burbules, and Monahan. Many other researchers have done studies of globalization, including authors such as Hall, Friedman, Lewellen, Robinson, Robertson. Friedman especially considers globalization to be a framework of understanding: what happens here and now should always be examined within larger processes, which means that what happens here and now is what globalization is. "The world is localized [now] to living rooms, to television sets, and to computer screens" (2006:119). According to Lewellen, "any study can incorporate a bit of global analysis" because "no culture or community is completely isolated from…world capitalism" (2002:30).

In this respect, I put the mapping of globalization on hold and left it as part of an analytical discussion. Using the concept of globalization as an extension of capitalism, I started looking for any patterns of a capitalistic culture, which, in the case of Blackboard, were not difficult to find. Things started clicking altogether when what I was observing became connected to what I have learned theoretically: overall, technology means work and organization. This concept was not new. What I didn't know until my observations at the University was the amount of work and the level of organization needed to turn Blackboard from invisible software to a lively and inhabited virtual space. There would be no Blackboard without collective work and institutional effort.

My attention then turned to labor, value, property, and power. Wittel describes these variables as "particularly relevant for a deep understanding of phenomena such as non-market production, peer-production, digital commons…" (2011) These variables are also quite relevant and a good fit for Blackboard's proprietary profile, its market struggles, and its marketing strategies. The difference between the objects of Wittel's study and Blackboard is that in open-source software many people devote and share their experiences and work voluntarily, while in proprietary products that openness never exists Within the idea of Chubb and Moe to make education as "a new industry," not only does work become a crucial variable, but it also becomes a strong indication of globalization as an expansion of human labor for economic gain geographically and into the public domains. In these terms, analyzing globalization is more than just symbolic. This study demonstrates the extension of capitalism in the field of higher education through LMSs developments.

Immersing Oneself into it

This study has been challenging mostly because it requires multi-disciplinary knowledge. Doing fieldwork in a familiar environment proved more difficult than I originally thought. It was hard to tear down the routine habits and thinking, to question things that appear normal or even unquestionable. I remember reading and coding in vivo the history of Cause and Educom. I read, "Cause grew out of a users' group at CUMREC, which was then an annual College and University Records Conference. In 1962, 22 data processing directors in colleges and universities organized as an IBM 1401 Users Group

at a CUMREC meeting in Chicago. They represented the first real users of computers…and their objective was to share information about the new administrative information system they were to develop."

Something clicked on me when I saw the words *the first real user* so close with other words such as computers, IBM, directors, objective. I read it again and I highlighted those words. It did make sense to have a conference of users of the so-called new administrative information system. Considering a large territory as the United States where those "users" were/are located, no doubt that such a conference would have meant high effort and organization. At first it appeared that IBM might have sponsored this conference in an attempt to make the right adjustments to connect their products with the skills and knowledge of the 1401 users. However, I was confused as to why these were not conferences for operators – those who might need the training – but for the directors. Why they were discussing the systems they "were to develop" instead of the issues with the current system? Was IBM educating the decision-makers on the IBM goals? In disbelief, I highlighted the whole paragraph and continued to read. One paragraph after another, it became clear that the activities of CAUSE and Educom were networking activities. People who met as representatives of their own institutions received the power and legitimacy to have their respective institutions engaged in a network of users; the computer technology became one of the networking strategies.

The activities of CAUSE and Educom over time suggest an exercise of that power through the inclusion and exclusion of other institutions as part of user networking. It was interesting to identify the patterns of what Castells considers networked power and

network-making power along with networking strategies. The business expansion by putting the LMS software in the market became a production of that networking technology became just a means to an end. I never found a single document, or fact, not stating that those (prestigious, as matter of fact) organizations, alliances, and networks in the American higher education aimed anything but “a better education,” “education for all,” “technology for a better education,” or other statements of high social ambitions. I never found a single document, or fact, stating that those networks were conducted under IBM supervision or a specific corporation’s agenda either. Instead, as the data suggest, those networks in higher education similarly to a corporate agenda are rooted in the same capitalist system; not only is money- making seen as a value, but it defines the entire system of values.

The IBM 1401 users group is probably one of the first recognized forms of affiliation between corporate and some of the institutions of American higher education that aimed an extension of the market of IBM products into the field of higher education. I call this a user phenomenon, or networks generated, regulated, and extended for increasing profit. The networks described in this study are not technological and not neutral; they are also not naturally grown and not because “there is no other way around”, as implied in the article of Chubb and Moe. Instead, those networks are politically imbued: they attempt to create a culture of use rooted in a culture of profit. In this context, a user remains one of the most ambiguous concepts in contemporary life. For many, it means an innocent individual dealing with technology. For some others, a user simply means profit as more users means more products sold. A deeper analysis,

however, shows that a user is just another term for a commodity. Through user networking, using is described as a value and learners are institutionally trained to become users. On the top of this, users work for free; their own experiences, ideas, and even failures are deployed for making a product better and ready for resale.

Validity, Realibility, and Limitations

An ethnographic approach can be thought as somehow limiting the findings to a certain setting and a certain time; what is described in the study mainly counts for what was observed with Blackboard technology at University during the 2012-13 school year. I strongly believe, however, that both a historical perspective of Blackboard developments and especially an analysis of Blackboard technology in the context of user networking enlarged the scope of the study to the point that generalizations of the developments of LMSs were made possible. Also, the categories and themes found in the data from the observations/interviews confirmed what the literature has suggested in the case of eLearning technologies, higher education, and globalization. However, in order to extend the conclusions, a study would perhaps need better insight on how Blackboard software is produced and should attempt to understand any struggles or intentions from that perspective. Although I do have personal experiences on both sides of online classes, a complete study should also consider a diversity of experiences from both students and faculty.

CHAPTER 4 : FINDINGS

Figure 4-1: eLearning technologies are a new toy for money-making

Introduction

Blackboard attempts to present a new way of teaching and learning, but for many people in the field that technology undermines the field of public education in the name of corporate interests. With educational improvements as the stated goal, Blackboard has become an exemplary model for the transformative possibilities within the field of education. Yet, a deeper look shows that the software developments have been intensely affected by the already-known capitalistic trends. This is most evident in Blackboard's neoliberal drive toward education, the way it shifts the teaching and learning model toward gains for a corporate interest. In this respect, Blackboard users surface as a representation of the network-making powers produced through the cultural conjunction of technology and learning.

Blackboard has become a signifier of the capitalistic advancements in the field of education. It should be noted that the field of American higher education is socially recognized for its high expertise in science and technology. American society also values its academia for its historic leadership role in freedom and social justice. For decades, however, social developments have brought together certain elite institutions within American higher education, corporate representatives, and American government who, through official policies and public discourse, seem to have helped build a fertile environment within which eLearning technologies are imbedded as social values. Thus, becoming an LMS user is a social production of an institutional power and collective effort rather than a matter of choice by an individual.

There is a discrepancy, however, between a sophisticated infrastructure built in large-scale for implementations of eLearning technologies in education and the issues and dilemmas faced by the learners who operate the LMS technologies. The connections, associations, and relations among learning intuitions, corporations, and government agencies officially aim at efficient social learning, but that is not always the outcome. Similar to the history of capitalist developments in industry, the implementation of eLearning technologies in the field of education is also associated with changes in social status, labor issues, and deskilling of learners. The difference between the associated social changes known and documented from technology implementations in the past and those related to the implementation of the LMSs in the field of higher education seem noteworthy. First, the implementation of an LMS in a school setting is associated with involuntarily exposing learners to those technologies. Considering that eLearning

technologies are not necessarily a part of the learner's agenda, the use of these technologies complicates the situation once the learner's performances are affected by involuntary skilling and deskilling. The tensions and conflicts among different groups involved in the use of eLearning technologies are no longer seen as issues between labor and capital; when these terms appear in this context, they are frequently used rhetorically with little analysis of the issue.

In contradistinction to the hopes raised by the new technical and economical conditions associated with the production and consumption of software, the LMS market developments show that little has changed from the old practices of capital. It is the same history of acquisition of rivals in the field, killing rival's products, using tricks to prevent a migration of customers and other practices of that nature, except from the fact that the old known capitalistic forms appear much more complex and sophisticated now. Not only has most of American culture settled to accept those technologies as a social value, but also, through the cultural mechanisms of social rewards and punishments, the decisions made at either institutional or individual level remain deeply affected by how those technologies are perceived and evaluated by the mainstream. It remains difficult to challenge the discourse that points at eLearning technologies as expanding the effectiveness of institutions and the access to education with no extra cost for students, even though tuition in higher education has shown an unprecedented increase in recent years. Importantly, the capitalistic trends affecting the developments of Blackboard software are no longer sporadic; they have no geographical boundaries, neither are they isolated to the developments of Blackboard software only.

The Power of Symbolism

The fetishism of Blackboard is deeply rooted to a wide-spread glorification of computers and the Internet in the human society of the 20th century. As a business, Blackboard flourished from a reality where profit and individual freedom – two social values often seen as complementary to each-other – are both considered as engines of American prosperity. In order to understand the social significance of Blackboard technology in American higher education and in social human relations beyond the technology, this section will chart the developments that led to, or got associated with, the transformations of Blackboard. The traces captured through the everyday routine are full of subtle messages that not only affect human understanding, but also affect human moods, feelings, and actions. Decoding those messages would mean to be able to trace the human connections, associations, and relations beyond them. It also means to understand the agendas that drive those connections, associations, and relations in society: not only is technology a human affair, but it is also one of the most utilized cultural symbols of the modern life. This definitely means to be able to reconstruct an animated technological reality that makes sense to the public.

Two Discourses

Despite the fact that a neoliberal language aiming a glorification of eLearning technologies is wide spread in the contemporary American society, the professionals in academia have established another discourse. While both address the existence of networks and institutional power involved in the technological developments, each

describes a situation in which decisions for embracing a learning platform in a college or university often reflect the leadership dynamics in the upper circles of higher education rather than a drive to directly improve learning or the learner's life. The differences associated with each discourse give glimpses of both the questionable nature of transformations attempted through eLearning technologies and their uncertain effects in learners' lives. Substantially, terms such as technology, labor, cost, and education as a new field of industry employed in these articles provide for an analogy between the transformations attempted through eLearning technologies in education (a public service) with the ones in industry (a profit sector known for its rigid capitalistic developments).

The analogy speaks toward a neoliberal strategy associated with the involvement of technology in education. These terms make it clear that the understanding of those technologies, and the human relations established through them, should follow an "industrial model" involving concepts such as labor, power, production, consumption, and commodity. Even though the developments in education are not usually analyzed in this manner, the choice of these terms proves to be especially useful when analyzing explanations of the political intentions associated with the eLearning developments.

The following short articles have the value of two linguistic artifacts in representation of those differences. The first one – *Who is Driving the Online Locomotive* – with author Rob Jenkins, an associate professor of English at Georgia Perimeter College published in the Chronicle in Higher Education (July 24, 2013) wrote:

> Proponents of online learning often use train metaphors to describe its growing impact on the educational landscape. Those of us who teach at two-year colleges, especially, are constantly encouraged, prodded, hectored, cajoled—and sometimes even ordered—to get on board. Otherwise, we're told, we're likely to be run over.

As one who is skeptical regarding the long-term benefits of online learning, I would attest that the train metaphor is pretty apt. I sometimes feel as though I'm standing on the tracks, signaling "proceed with caution," while the online locomotive bears down on me, air horn reverberating.

I suspect others share that vivid nightmare. But what makes it especially sobering now is that, with the advent of MOOCs, the train is picking up steam and we're no longer alone in its destructive path. These days entire departments, disciplines, and even institutions potentially stand in the way, at risk of being pulverized along with the rest of us.

Thinking about that phenomenon has led me to wonder, lately, just who is at the throttle. I think that's a question well worth asking, and the answer ought to inform our response as faculty members. It seems to me that there are only a handful of possibilities:
Students. Supposedly everything we do in higher education is for the students, and we tend to be especially insistent on that point whenever we fear people might question our motives. Online learning is a perfect example. The reason we keep offering more and more classes online is that students are demanding them. Right?

Well, maybe. It's true that during the past decade, the number of students enrolled in online courses grew at a significant rate. But according to a recent study, that growth started leveling off in the fall of 2010, when about 31 percent of all postsecondary students were taking at least one online class. Researchers concluded that "the slower rate of growth ... compared to previous years may be the first sign that the upward rise in online enrollments is approaching a plateau."

Moreover, a survey conducted this year by the Community College Research Center at Columbia University found that students at two-year campuses, in particular, prefer face-to-face over online instruction, especially for courses they deem difficult.

So while some students want, need, and benefit from online classes, the argument that students in general are clamoring for them doesn't exactly hold up.

Faculty members. Are they driving the train by demanding to teach more and more classes online? After all, faculty members are often faulted for putting their own scheduling preferences ahead of students' needs and desires. Is this simply another case of professorial self-centeredness?

I don't think so. Speaking anecdotally for a moment, I've talked to literally scores of people who teach online, at my institution and others. Hardly any of them prefer it. Oh, they might prefer it in the sense that teaching online allows them more flexibility or reduces their commute. But the overwhelming majority of them tell me that, all things being equal, they would much prefer to teach in a traditional classroom, because they enjoy the personal interaction with students.

According to a 2009 report by the Association of Public and Land-Grant Universities, only about 36 percent of faculty members have any experience developing or teaching an online course—a number that conforms closely to the roughly one-third of students who take classes online. Moreover, according to The Chronicle's report, the study also found that professors' general attitude toward online courses remains unfavorable—even among those who teach online: "70 percent of all faculty members believe the learning outcomes of online courses to be either inferior or somewhat inferior, compared with face-to-face instruction."

When it comes to MOOCs, even fewer faculty members are on board. In fact, as we saw during the recent exchange between San Jose State University's philosophy department and the Harvard professor Michael Sandel, for every faculty member developing a MOOC, there appear to be dozens who object to using such courses in lieu of more traditional offerings.

More telling, perhaps, is the recent Chronicle survey that found that 72 percent of faculty members who teach MOOCs don't believe their students should receive college credit. In other words, even supporters of MOOCs don't think they're as good as face-to-face instruction.

So it's not our colleagues at the throttle of the monstrous locomotive threatening to squash the rest of us.

Employers. Maybe it's the end users, the companies that hire our graduates, who insist on more and more—and bigger and bigger—online offerings. Certainly, if you listen to the administrators and politicians (and yes, I'll get to them in a moment), that would seem to be the case.

Unfortunately, that theory doesn't wash, either. Another recent survey conducted for The Chronicle found that employers have a favorable impression of all types of colleges and universities—except for online institutions. And while there's certainly a difference between students who complete their entire degrees online and those who just take a few online courses, the findings clearly suggest that employers don't trust online instruction as much as traditional methods.

Just a few weeks ago, in "Giving Employers What They Don't Really Want," Robert J. Sternberg, president of the University of Wyoming, tackled this issue directly. He noted that most of the employers surveyed by The Chronicle said they were looking to hire people with "a demonstrated capacity to think critically, communicate clearly, and solve complex problems" as well as having "ethical judgment and integrity; intercultural skills; and the capacity for continued new learning." The problem, Sternberg said, is that "those are not skills optimally developed through passive learning ... including MOOCs."

Whatever we've been told, I don't believe employers are demanding that students take more online classes or sign up for MOOCs. Which brings us to ...

Administrators. Since the "online revolution" began in the mid-1990s, I've taught at three different two-year colleges, visited many others, and sat through countless conference presentations trumpeting the latest technological breakthrough. My observation is that administrators, along with a handful of true believers among the faculty, have always been the primary proponents of online learning. On campus, at least, they're the ones driving the train.

Why? The main reason, I believe, is money. Online courses enable colleges to enroll students and "deliver content" inexpensively, since they don't require classrooms, parking spaces, restrooms, or, in some cases, even faculty offices. I've heard people argue that, done well, online courses can cost just as much as the face-to-face variety. That may be true, but I dare say that at most two-year colleges, they are offered as cheaply as possible, and that is one of the reasons, if not the main reason, for their existence.

California's higher-education leaders basically admitted as much when they considered, a few months ago, the possibility of "outsourcing" some of their course offerings. The problem as they saw it was that they couldn't afford to offer all the classes students wanted; and the solution, they thought, might just be MOOCs, which would enable them to provide those courses (in a manner of speaking) at comparatively low cost. Fortunately, that idea fell through.

Another reason that campus leaders—especially at two-year colleges—seem so anxious to embrace online learning is that it's "innovative." If there's one thing every community-college president wants carved on his or her tombstone, it's that he or she was "an innovator." (That, and maybe a "transformational leader.") Ironically, for many of those presidents, being innovative seems to mean doing exactly what everybody else is doing, only more of it.

Clearly, the online train that threatens to roll right over us has an administrator at the throttle, gleefully pushing the handle toward "full power."

Politicians. On the other hand, administrators are not alone. Joining them in driving the train is a politician (or two, or a dozen) shouting encouragement, or perhaps threats.
Administrators, after all, especially at public institutions (which nearly all community colleges are), serve at the pleasure of politicians. And what is it that pleases politicians? Apparently, it's for as many students as possible to take as many online classes as possible.

Exhibit A is an opinion essay by Jeb Bush, the former governor of Florida, and Randy Best that ran in Inside Higher Ed back in May. Entitled "Higher Ed in 2018," the essay foresees an educational landscape in which "more than 80 percent of professional degree

programs [sic] ... will be earned online." Why? Because "rising tuition, declining government subsidies, stagnant endowments, and increased competition are challenging higher education like never before."

In other words, it's all about the cost. As the friend who sent me that essay noted, nowhere does it say anything about the quality of education people will be receiving in this brave new world. That's because all too often politicians, like administrators, aren't concerned with quality; they're more interested in the bottom line. And it's not just Republican politicians, like Jeb Bush, who fall into that category: The state senator in California who originally proposed outsourcing to MOOCs is a Democrat.

I understand that politicians have a duty to be good stewards of public money, as do college administrators; and I certainly don't have any objection to cutting costs where we can. But when our primary objective becomes making degrees as cheap as possible, rather than providing the best education possible, we're missing the mark as educators and doing no good for the future of our students or our nation.

That's why it's so important for us as faculty members to realize who's driving the online locomotive. It's not students, only about a third of whom take any online classes. It's not our colleagues, the vast majority of whom still aren't fully on board with online learning in general, much less with MOOCs. And it's certainly not employers, who over all seem to prefer that students take most of their coursework in traditional classrooms. It's the administrators and the politicians, whose priorities—let's be honest—are not the same as ours.

I sometimes wonder if the train is so big, and moving so fast, that it's just going to derail itself due to basic physics. But unless that happens, and until it does, the only way to slow it down is for enough of us to refuse to get on board and instead line the tracks, signaling "proceed with caution" with all our might."

In summary, Jenkins' perspective (which, as a matter of fact, remains a widely-shared perspective within academic press) makes quite a few important points. First, rather than being demanded by students, professors, and future employers, online education is embraced by higher-education leaders and is supported by some politicians who, regardless of their respective political memberships, claim that online teaching is cheaper than traditional education. Second, instead of any clear progress and improvements, the developments within online education are deeply mixed with the

uncertainty and fear of professors and staff who feel, as Jenkins states, that "entire departments, disciplines, and even institutions potentially stand in the way [of online learning and are thusly] at risk of being pulverized." Third, these issues are only heightened by the fact that some colleges, according to the article, are considering the possibility of outsourcing some of their course offerings, language that reminds the reader of some of the latest trends in economy, publicly criticized for their negative effects on the social life of the citizens.

Interestingly, when stating that some college leaders prefer online learning because of what can be described as innovative values – as community college presidents seek to have "an innovator" or "transformational leader" as their epitaph – Jenkins paints a background of competition, a setting where leader is pitted against leader and one institution of higher education faces another. Jenkins's generalization may sound confusing if considering that for the public those institutions are recognized individually and assumedly with ties with their own communities. However, as the data of this study shows, there is a reality in which the educational institutions appear with networking ties. Finally, Jenkins states that faculty members are constantly "encouraged, prodded, hectored, cajoled – and sometimes even ordered – to get on board. Otherwise we're told we're likely to be run over." The article demonstrates that institutional power is enforcing the movement to LMSs instead of any innovative successes of these eLearning technologies. The reader is led to question the claims of cost-effectiveness of these technologies, especially considering the ever-increasing rates of tuition.

A second, diametric discourse, also from think tank halls of academia, comes from *Higher Education's Online Revolution,* a Wall Street online article by John E. Chubb, described as a distinguished visiting fellow at Stanford University's Hoover Institution and interim CEO of Education Sector (an independent think tank)[43] and Terri M. Moe, described as a professor of political science at Stanford and a senior fellow at Hoover, co-authors of "Liberating Learning: Technology, Politics, and the Future of American Education[44]. They write:

> At the recent news conference announcing edX, a $60 million Harvard-MIT partnership in online education, university leaders spoke of reaching millions of new students in India, China and around the globe. They talked of the "revolutionary" potential of online learning, hailing it as the "single biggest change in education since the printing press." Heady talk indeed, but they are right. The nation, and the world, are in the early stages of a historic transformation in how students learn, teachers teach, and schools and school systems are organized.
>
> These same university leaders mentioned the limits of edX itself. Its online courses would not lead to Harvard or MIT degrees, they noted, and were no substitute for the centuries-old residential education of their hallowed institutions. They also acknowledged that the initiative, which offers free online courses prepared by some of the nation's top professors, is paid for by university funds—and that there is no revenue stream and no business plan to sustain it.
>
> In short, while they want to be part of the change they know is coming, they are uncertain about how to proceed. And in this Harvard and MIT are not alone. Stanford, for instance, offers a free online course on artificial intelligence that enrolls more than 150,000 students world-wide—but the university's path forward is similarly unclear. How can free online course content be paid for and sustained? How can elite institutions maintain their selectivity, and be rewarded for it, when anyone can take their courses?
>
> This challenge can be met. Over the long term, online technology promises historic improvements in the quality of and access to higher education. The fact is, students do not need to be on campus at Harvard or MIT to experience some of the key benefits of an

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[43] Harvey states that "…the advocates of the neoliberal way now occupy positions of considerable influence in education (the universities and many 'think tanks')…" (2005:3)
[44] John Wiley & Sons 2009

elite education. Moreover, colleges and universities, whatever their status, do not need to put a professor in every classroom. One Nobel laureate can literally teach a million students, and for a very reasonable tuition price. Online education will lead to the substitution of technology (which is cheap) for labor (which is expensive)—as has happened in every other industry—making schools much more productive.

And lectures just scratch the surface of what is possible. Online technology lets course content be presented in many engaging formats, including simulations, video and games. It lets students move through material at their own pace, day or night. It permits continuing assessment, individual tutoring online, customized reteaching [*sic*] of unlearned material, and the systematic collection of data on each student's progress. In many ways, technology extends an elite-caliber education to the masses who would not otherwise have access to anything close.

Skeptics worry that online learning will destroy the "college experience," which requires that students be at a geographical place (school), interacting with one another and their professors. But such a disconnect isn't going to happen. The coming revolution is essentially about finding a new balance in the way education is organized—a balance in which students still go to school and have face-to-face interactions within a community of scholars, but also do a portion of their work online.

In this blended educational world, the Harvards and MITs will not be stuck charging tuition for on-campus education while they give away course materials online. They and other elite institutions employ world-renowned leaders in every discipline. They have inherent advantages in the creation of high-quality online content—which hundreds of other colleges and universities would be willing to pay for.

In this way, college X might have its students take calculus, computer science and many other lecture courses online from MIT-Harvard (or other suppliers), and have them take other classes with their own local professors for subjects that are better taught in small seminars. College X can thus offer stellar lectures from the best professors in the world—and do locally what it does best, person to person.

Don't dismiss the for-profit colleges and universities, either. Institutions such as the University of Phoenix—and it is hardly alone—have embraced technology aggressively. By integrating online courses into their curricula and charging less-than-elite prices for them, for-profit institutions have doubled their share of the U.S. higher education market in the last decade, now topping 10%. In time, they may do amazing things with computerized instruction—imagine equivalents of Apple or Microsoft, with the right incentives to work in higher education—and they may give elite nonprofits some healthy competition in providing innovative, high-quality content.

For now, policy makers, educators and entrepreneurs alike need to recognize that this is a revolution, but also a complicated process that must unfold over time before its benefits

are realized. The MITs and Harvards still don't really know what they are doing, but that is normal at this early stage of massive change. Early stumbles and missteps (which edX may or may not be) will show the way toward what works, and what is the right balance between online and traditional learning.

But like countless industries before it, higher education will be transformed by technology—and for the better. Elite players and upstarts, not-for-profits and for-profits, will compete for students, government funds and investment in pursuit of the future blend of service that works for their respective institutions and for the students each aims to serve.[45]

Apparently, what Jenkins describes as a "vivid nightmare" is presented by Chubb and Moe as both a historic change and a revolution in education. Interestingly, even though both of the articles are written by individuals in the field of education, Jenkins paints a technology-victimizing image and Chubb and Moe portray one of salvation through this technology If Jenkins' article expresses an educator's concerns on official decisions that show preferences for online learning based on a low-cost (or market-driven) assumption, Chubb and Moe's article appraises online education for assumedly providing an elite-quality education to more consumers by using the same, already questioned, low-cost argument. The last vision exceeds what Rob Kling described as "technologically utopian visions" more than two decades ago. (1991:323)

What may sound like either technological enthusiasm or positivistic exaggeration in Chubb and Moe's article turns, however, quite problematic in one of their statements: "The substitution of technology (which is cheap) for labor (which is expensive) can vastly increase access to an elite-caliber education." They later add that, "like countless industries before it, higher education will be transformed by technology – and for the

[45] Chubb and Moe, Wall Street Journal. Published on May 30, 2012. Retrieved on 07/01/2013

better." Different from Jenkins, Chubb and Moe's rhetoric is sharply suggestive in a different direction. They write, "In short, while [elite schools] want to be part of the change they know is coming, they are uncertain about how to proceed."

It is the philosophy hid by this neoliberal rhetoric which proves the social impact of eLearning technologies which exceeds learning itself. Instead, certain groups in American society consciously count on these so-called eLearning technologies as a social transformative mechanism for allocating the teaching power outside school – and not necessarily in order to improve the quality of education. This phenomenon is not unknown in the studies that focus on technology as a human affair. The question here is not whether there are any political implications attached to the eLearning technologies, because technology is "politics constructed by technological means." (Pfaffenberger 1992b:282) In these terms, it became imperative to understand the politics enacted through LMS technologies. The study, as already stated, considers users as a crucial factor of LMSs; to understand *the politics constructed by those technological means* requires using the learner as the primary focus, examining the processes that catalyze the transformation of learner into an LMS user, and explaining a user's resistance in its context.

The Man of the Year

Socially, Blackboard is not much different from other software applications. Generally speaking, the Internet technologies have been transmitted as social values by media far before the Internet and computers became objects of American household. The

myth of technology in contemporary American society has become sophisticated to the point that it is difficult to detect it without a deep, intentional analysis. Exaggerations in presenting products and services are widely accepted in the American culture, based on the consumerism idea that one has the right to advertise for best-selling results. In the case of mass communication technologies, advertising has been so intense that computers and computer technologies are perceived as an individual need.

The phenomenon is especially true in the field of education where they are heralded as lowering the cost of schooling, as promoting better student accessibility, and as allowing for a student-centered education. A whole myth is propagated either by giving mysterious properties to computers or by describing them in a friendly yet sophisticated relationship with human beings. It is this mythic approach that provided for the computer to become a celebrated household item for millions rather than just the widely spread assumption that the computers became a household object when they became affordable.

Two selections of Time magazine's Man of the Year suggest the importance of public discourse in preparing a fertile social environment for an ever expanding relationship between human and technology: the selections of the computer in 1982 and of YOU in 2006[46]. As often, the preparation was developed through a public discourse transmitted by established institutions. From Barthes' perspective, the discourse is a mix

[46] Through my Internet searches I learned that when Time magazine showed computer as the Man of the Year, the title was promised to Steve Jobs. A related article by Philip Elmer DeWitt Steve Jobs cried when he read Time's 1982 Man of the Year published on October 24, 2011:8:00AM ET can be found at http://tech.fortune.cnn.com/tag/machine-of-the-year. Retrieved on 01/02/2014.

of new objects and meanings within an already existing system of signs and meanings that aims at the creation of certain affiliations among new objects and the existing social system of values. For instance, for the first time since the *Man of the Year* rubric appeared in 1927, *Time* magazine selected something other than a human as its icon in 1982, choosing the computer (Figure 4-2). *Man of the Year* is a sign of a social prestige. Selecting this specific machine as the *Man of the Year* speaks of a deliberate strategy that signifies the social prestige of computers and technology in contemporary American society. Selecting computer as the *Man of the Year* creates a fictive kinship metaphor,[47] a creative imprecision by which the idiom of relatedness is used to strengthen an image or feeling of identification between human and computers. This myth creates both associative and transmutative modes.

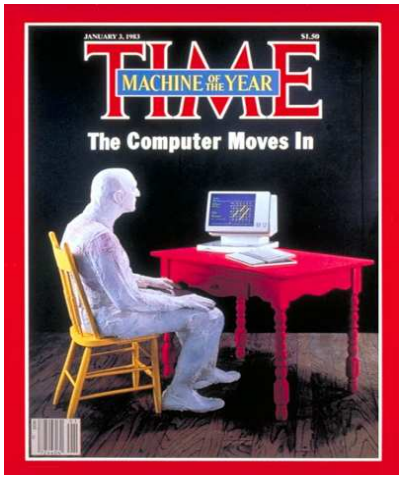


Figure 4-2: Man of the Year, 1982

The cover of the 1982 Man of the Year issue attempts to create an association between computer and man, an association clearly shown as both the man and the computer are the only silver objects in a colorful cover. The cover states, "The Computer Moves In," creating a domestic relationship between man and machine. It is also transmutative in the sense that similarly as in the playful association between grandparents and grandchildren who play house or spouses, it compartmentalizes and makes the relationship intimate as between

[47] The Dictionary of Anthropology defines the term as "creative imprecision by which an idiom of relatedness is used to strengthen an image or feeling of identification between two or more persons or beings." (2000: 186)

man and (wo)man (two humans) and not as between man and machine, which would lose the intimacy between the two. Through both its associative and trasmutative properties, the cover provides for a well-calculated political action that promotes computer as a household item. The myth here does not report either the association or the transmutation. Instead, it indulges them: computer is a man's necessity.

The 2006 announcement of **You.** (read as *You-period*) as the Man of the Year (Figure 4-3) by the same magazine provides another example of the mythic construction of the computer. The human-computer relationship is writ large on the cover; the image of the computer dominates the page and shows only a single word on its silver screen: "**You.**" (written in bold and starting with a capital letter). The text beneath the image underscores the intimacy of the human-computer relationship: "Yes, you. You control the Information Age." *You-period* is the Man of the Year because of this special influence and power: *You-period* controls the Information Age. The last line of text, "Welcome to your world," is the ironic invitation that welcomes *You-period* into the world of computers, the world that *You-period* was already shown to control. Interestingly, in the magazine cover of 2006, the human is symbolized only by the letters on the page: you have no name, no ethnicity, no religion or sex preferences because YOU is the consumer and basically every-you can make a consumer.

Figure 4-3: Man of the Year, 2006

These two covers represent a sequential form of technology signification. On the 1982 cover, the signifier was the title "Man of the Year" and the signified was computer, a machine with such a social prestige. On the 2006 cover, when the computer had become a sign of the society future, it became the signifier of "**You**.": computers, and the computer technology, will define human beings through computer skills and knowledge and the level of use. The myth here is something with which the contemporary American society lives every day: a human being is as good as the computer user she or he makes. Although the computer has become commonplace in contemporary American households, this was not the case when computer was first announced as Man of the Year by *Time* magazine. It may be hard to trace the specific connections, associations, and relationships that moved American households into a computer's world, especially now that computers are largely felt as a household necessity. However, such examples are significant for explaining how the individual use of computers was culturally constructed as a social value at large paving the road for individual users to inhabit the computer technologies in the fields of education or health care.

Sara

Quite often the public discourse affects our thoughts and actions by creating a standard for them. **"**People, with no particular knowledge can chat all day on the Internet and use Facebook, but [they] find it difficult to use Blackboard for online classes… How do you feel about that?" The words made me anticipate an intelligent conversation until I realized that the trainer had no intension for any deep discussion. It was just one of those

ordinary, catchy questions that usually open a presentation. Right after she said this, she moved on to show the audience a video of Sara, a girl in first grade from Fairfax County, VA[48] using Blackboard to "read the books the teacher puts on Blackboard, to write [her] friend, watch videos…" Then, from the screen, Sara said that she wanted to show us (in the audience) how she accessed Blackboard and some "cool" websites that her teacher puts on Blackboard and where kids learn stuff like "how to wash their hands", "how to…". In the end, the video showed the following text: "Are you smarter than a first grader?"

In a short moment, I saw people around me moving on their chairs, murmuring, and kind of laughing. A man who looked in his sixties and who later on introduced himself as a chemistry professor, murmured something like, "Well, not… enough since… here…" Then several of us who heard him laughed again. Sara ended her speech with a cliché that sounded like if a first grader could do it, then everybody else can. "*It's really easy*", Sara said. The trainer turned on the lights and added exactly what I was afraid to hear, "*Isn't she cute? She is a real student from Kings Park.*" The trainer got the auditorium's attention. A sarcastic voice somewhere behind me said, "*Now we are ready to learn and this is when fun starts*". I couldn't turn around to see who said it and I just laughed. "*Shshshh,…that's…cheesy.*" Then another "shshsh…" People were there for a certain reason and just wanted to get into the "real business". I remember thinking, "Who made this video? *Do they want us to feel confident or guilty?"* But, who are they? That

[48] When I started to write the dissertation, I found the video of Sara on YouTube: http://www.youtube.com/watch?v=zNZmG31gBls. Retrieved on 10/18/2013.

day, the audience had perhaps 40-45 faculties trying to learn about some of the new features of Blackboard. The session started by watching the video of Sara, a first grader, saying, "*If I can do it, then YOU can do it*."

Culture, Technology, and Human Dilemmas

The power of a mythic fabric stands to its appearance as a system of facts. The existence of LMSs in education is never questioned. Instead, any related discussions usually address how to improve such technologies. It has become commonplace in academia or public discourse to say things like "a culture of Internet", or "the culture of PC," or "the software culture." It seems that this kind of merely symbolic discourse can lead to further assumptions and misunderstandings while also setting the ground for the market strategic intentions. Generally speaking, the peril of identifying a culture with an object means underestimating the processing nature of technology, neglecting the role of humans in those processes, and assuming the skills and knowledge required for a positive outcome when operating technology. This kind of misunderstanding, even though innocent at an individual level, can make a fertile ground for strategic corporate decisions that come with social consequences.

The Thing and the Engineer

The engineer, who happens to be working in the field of software applications, loves his job to the point that he thinks about it even when he is away from the office. There are days that he calls me as soon as he leaves work to share stories about some *cool stuff* he does at work. He says things like, "*Man, I love my job. [When you are an*

engineer], you always do stuff. It is so cool." He also believes that his job (*doing stuff*) is a *real* job. When I shared with him that my dissertation would be on Blackboard, he seemed surprised, laughed politely, and said, *"Come on now…Blackboard... So…what's your point?...Aren't you still an anthropologist?...*" He seemed confused on the idea of me being an anthropologist and choosing Blackboard (technology) as a subject for my study. We had a discussion on what technology is and why anthropologists can and should study technology. For him, concepts can't be more important than things. He said, "… *Like, why would one need to know that? When you are an engineer, it matters what you do, not how you call it. You know what I mean?"* He may be correct: One can live a whole life with no need for certain definitions. Yet, the way we define the world is the way we perceive it, which, furthermore, shapes our actions.

Somehow we share the same physical world, but our understandings derive from and are deeply affected by how we are situated in society: what group or groups we belong to, what we do for living, what type of education we have, and what beliefs we share. Being an engineer and feeling attached to what is randomly described as *cool things* is mostly perceived as completely different from being an anthropologist, even though as an anthropologist, one may be able to discover the unseen parts of *the cool stuff*. The difference in how people view our world becomes problematic when the material world gains social value and becomes fetishized; the producers not only take power to define and index things, but also to affect a society's decision-making.

The Assemblage of Online Technology

There is more than one wrong perception about online classes which are described as self-taught and with minimal faculty supervision. In contrast, from my own experiences and based on my discussions with colleagues, the teaching faculty believes that there is much more work involved when teaching online than face-to-face. There is a tendency to routinize or computerize the processes of online teaching, neglecting the social significance of human relationship beyond. Not only is the human negotiation in education long recognized, but it is also institutionalized through different mechanisms, as it will be explained further in the following paragraphs.

In contrast, the routine of online classes involves what, generally speaking, can be described by the known terms of technology, science, human skills, knowledge, memory, and much more. I will describe online grading as an illustration. The process means a completion of a series of tasks: get the laptop, turn it on, log in using an ID and password, go to My Favorite Places, click on the button recognized as the University, insert my ID and password in a designated area, check email, read email, send and/or reply to others, go to the Blackboard Tab, click on one of the current courses' links, go to the Grade Center, look over the assignments submitted by students, and click on the ones that are ready to be graded. If the assignment is a course paper, download the document first. Then, read and insert comments. Add the points. Submit. Move to the next student.

None of the steps described in this process is merely technology or merely skills or merely knowledge, for that matter. Grading an online paper needs every one of the steps, which requires one to have an institutional access to my class, to have a computer, but also to have access to the Internet, Blackboard, power, etc. As already stated, even

though online grading is built into such a technological framework, in reality, the whole process is especially characterized by human negotiations. Adding points automatically online for the completion of tasks is not the totality of the grading process: online grading remains a process of human negotiation. Even when the points show right away on Blackboard, as in the case of tests or quizzes, formulating the questions, adjusting each question and possible answer, and shaping the entire assessment, including the time each group of learners would need in testing, remains a case of human judgment and subjectivity.

Grades themselves remain a matter of human negotiation, even though there are so many institutional rules in this area. The American educational system considers grades sacred and merit-based. The system is built on checks and balances, which involves a student evaluation of the instructor at the end of the semester. It is obvious to many faculty members and administrators that those evaluations are also subjective and greatly affected by a consumer satisfaction mood: If a good or even easy grade is expected, the chances for a good student evaluation are high. Or, the evaluation can be problematic if the grades received during the semester are not satisfactory to the student. The system of grading and evaluation is very complicated especially for online classes. Even though grading is not within the scope of the study, the argument here is on the complexity of technological processes in grading online but also on the undistinguishable role of the human factor in the process of grading.

Human Issues and Dilemmas

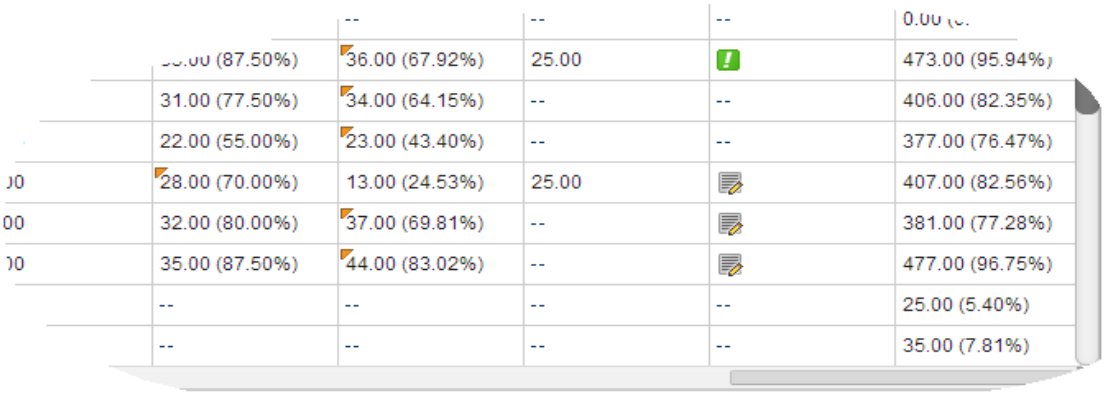
As already discussed, using Internet technologies for teaching and learning can make education more difficult for learners. The discrepancy between the official discourse of Blackboard and the reality of its use is only a small part of the confusion. A large part of it has to do with the learner's competency: skills, knowledge, and habits for operating those technologies. Although eLearning technologies continue to be used by more and more universities and although these technologies are continually updating and changing, little attention is given to building the skills and knowledge of learners, who are usually assumed to be fully capable of self-learning. Ignored is the human capital especially when those technologies are switched and all should start from the beginning. This situation can create conflicting images and even can make it difficult to detect issues faced by learners. Online classes offer ample evidence of this issue. Sometimes I get emails that read,

> "*…I just posted my discussion on the Discussion Board and realized that a green sign appeared on that column seen from the Grade Center. Please let me know what is wrong there so I can fix it. Just don't want to lose any points since I am working hard. Thnx* [*sic*]."[49]

A green square with a white exclamation mark inside is a Blackboard sign that shows automatically after a submitted assignment is complete and ready for grading (Capture 4-1). The sign appears differently when work submitted does not meet certain criteria. When these criteria are not met, as shown on Capture 4-2, the sign is gray with what looks like a small piece of paper and pencil. Those are all new, clever clues to help the Internet communication. By knowing the meaning of those signs, a student can avoid

[49] From individual communication at my WSU account.

unnecessary related communication with faculty or peers. A lack of a shared understanding is an indication of the inner conflicts between an official language of the technology and an institutional attempt for building a culture of use where the technology use is considered a social value without providing for ways that a deep understanding of the technology can reach all learners. At this level, learning the technology is left to be achieved occasionally through contact with other users or through an individual trial and error.



	--	--	--	0.00
	36.00 (67.92%)	25.00		473.00 (95.94%)
	31.00 (77.50%)	34.00 (64.15%)	--	406.00 (82.35%)
	22.00 (55.00%)	23.00 (43.40%)	--	377.00 (76.47%)
)0	28.00 (70.00%)	13.00 (24.53%)	25.00	407.00 (82.56%)
00	32.00 (80.00%)	37.00 (69.81%)	--	381.00 (77.28%)
)0	35.00 (87.50%)	44.00 (83.02%)	--	477.00 (96.75%)
	--	--	--	25.00 (5.40%)
	--	--	--	35.00 (7.81%)

Capture 4-1: The LMS language is often confusing

In sum, this section briefly describes the assemblage of eLearning technologies highlighting the differences of the assemblage elements that include but are not limited to artifacts, laws and rules, human competency, actions, attitudes, language, and procedures. An important aspect of Blackboard is the discourse surrounding the technology that speaks of human negotiation, organization, and institutional power involved in the technological processes. The next section is a detailed description of Blackboard assemblage in its own context.

Blackboard Assemblage

In general terms, *Blackboard* is used in reference to a software package mainly designed for educational purposes. For this study, *Blackboard* is defined as a technology that involves the Internet for teaching and learning that is produced by Blackboard, Inc. from 1998 until the company was sold. Simply put, Blackboard is a software application that allows online communication and exchanges for educational purposes. The technology is known for supporting fully online classes and providing space for face-to-face supplementation. At different points, Blackboard has been known as a Learning Management System (LMS), a Course Management System (CMS), and a Virtual Learning Environment (VLE).

The Software

From the first version of the product, when Blackboard was just an "idea for making college applications online,"[50] until now, when Blackboard is mostly identified with online education, the product has greatly changed in how it is conceptualized, produced, implemented, transferred, organized and perceived. For this study, Blackboard refers to the software package under the popular term *Blackboard* widely known and used in the field of education mainly between the years 2000 and 2013, a period under the focus for my study. The Blackboard software has had many developments during this time; some of its features have changed, some have retired, and some others have been

[50] Interview with Michael Chasen, the CEO of the year of 2006. www.smartceo.com May 2006 Issue. Retrieved on 06/11/2013

created and added. However, there is still a Blackboard architecture that makes the product recognizable among its users.

As of the end of 2013, according to the official website of Blackboard, LLC, the Blackboard software package includes a variety of software and services that extends the idea of teaching and learning through online communication. It includes the following platforms:

Blackboardlearn (symbol +) is a popular software that enables online teaching. It is described as making "teaching effective, and learning more exciting-in and beyond the traditional wall."

Blackboardconnect (symbol))) is a software that enables communication via Internet. It is described as a tool for reaching an "entire community in seconds with personalized messages, updates, and alerts."

Blackboardanalytics (symbol √) s is a software that enables a database information and results. It is described as helpful for getting "quick, self-service access to accurate information so [one] can make more informed decisions."

Blackboardcollaborate (symbol ») is a software that offers a "more social, interactive learning experience that keeps everyone engaged."

Blackboardtransact is a software that enables financial transactions. It is described as making "life on and off campus more secure, convenient, and prosperous for everyone."

Blackboardmobile is a software that enables connections through a cell phone. It is described as giving a "community access to all aspects of educational experience and campus services in their mobile devices."

Blackboardengage is a software that provides "a solution that truly meets the website and communication needs of every K-12 stakeholder."

Blackboard also offers a package of **services** such as the following:

Developmental Education is a comprehensive program of blended instruction and online remedial courses designed to improve student achievement level cost-effectively.

Managed Hosting is a program that aims to help the achievement at the highest levels of uptime, availability, and peace of mind 24/7.

Strategic Solutions is an expert guidance that aims to get the most out of technology, build new programs or improve existing ones.

Student Services is a program for deliver easy access to services—from assistance with financial aid and registration to technical support.

Education Open Source Services is a full range of services added recently that support the use of open source technologies in education, including Moodle, Sakai and others.

Online Program Management is support for developing a program that extends local capabilities, meshes with the uniqueness of institution, and fulfills one's online learning vision.

A Business Model

In 1996, Mathew Pittinsky, a KPMG[51] employer, focused his attention on "education as an industry," using that mantra as a goal for his future business plans. Describing the moment that sparkled "Genesis," a 100-page business plan document that initiated the Blackboard Inc. Pittinsky wrote:

> "*One day I just got this idea for Blackboard. I remember I was jogging along the Charles River and it dawned on me that at different places around the Harvard University campus the faculty was starting to use the Web. I wondered if they were using the Web in their class work.*"[52]

Soon after the creation of "Genesis," he and Michael Chasen, another co-worker from KPMG, embraced the idea of an Internet technology that would offer online applications for a fee to the students in higher education. The concept of the Internet as a provider for sharing information in higher education became quintessential in their

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[51] KPMG, LLC an audit, tax, and advisory firm is one of the largest professional services companies in the world and one of the Big Four auditors, along with Deloitte, Ernst & Young and PricewaterhouseCoopers. Its global headquarters is located in Amstelveen, the Netherlands.

[52] Chasen the CEO of Year 2006. www. Smartceo.com May 2006 Pg.47. Retrieved on 06/11/2013

business model. As stated during the same interview cited above, they decided to call it Blackboard, because "Blackboards have been vivid symbols of the way we have learned for generations."

From a variety of public interviews given by the Blackboard co-founders, and also based on Blackboard technology developments over time as I have experienced them, it has become obvious that the business goals became the central motivating factor for the product rather than the educational outcomes of learners. As Chasen explained in his interview as CEO of the year 2006 , he wanted "a business model" that will allow him to do what he loved, work with his friends, make a lot of money and change the world. Even though they describe themselves as "computer guys," both Chasen and Pittinsky lack either computer or educational backgrounds. Instead, they shared a business dream and vision to involve the Internet in their business. They founded Blackboard LLC in June 1997 as a business that could use the Internet to gain a foothold in higher education. Based on Chasen's interview as the CEO of the year 2006, the main goal of the company during that time was to provide "technical standards for online learning applications".

Blackboard LLC, at that point a prospective business, started its life as a contractor of Instructional Management System Global Learning Consortium (IMS GLC), a non-profit organization described as a global, non-profit, member organization that aims to enable "the growth and impact of learning technology in the education and corporate learning sector worldwide."[53] As it will be further explained in the next section, this situated Blackboard into what is described here as a user network within American

[53] www.educause.edu

higher education. IMS GLC is a project within the National Learning Infrastructure Initiative (NLII) of EDUCAUSE[54], designed "to establish the critical aspects of interoperability in the learning market." These connections help trace the developments of Blackboard, demonstrating how this technology gained access to the main players in the educational field, how the main goals of this consortium influenced the expansion of Blackboard, and how these early relationships provided for the future business of Blackboard.

A Public Promise: Just Click and Read

The official website of Blackboard, Inc., states that CourseInfo LLC – the other major part of what became known as Blackboard – was founded at Cornell University, a few months later than Blackboard, LLC., in August 1997. CourseInfo's official plan was to develop a technology to create easy tools for professors who wanted to have useful materials online for their classes.

Daniel Cane, who co-founded CourseInfo with Stephen Gilfus, describes himself as a sophomore at Cornell University in Ithaca, New York, when he realized that there were "a lot of deficiencies around the [university] campus."[55] In the late 90s even though the Internet was not as popular as it is today, the dorms at Cornell were all wired and connected. This made it possible for some of the university professors to use their own

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[54] http://www.educause.edu/about/mission-and-organization/history/educom-history. Retrieved on 09/12/2013

[55] Interview with Daniel Cane. The success story of Daniel Cane: Serial entrepreneur and founder of Blackboard. http://www.youtube.com/watch?v=SIblJ7cbFCg. Uploaded on October 28, 2011. Retrieved on 09/30/2012.

websites to put course materials online for their students. Cane, a student with good computer skills, helped a senior lecturer in her statistics course in improving a website to facilitate communication with her 300 students. In his interview, Cane describes the initial idea as very simple: it consisted of how to get a copy of the course notes into an existing network so students in the classroom could spend more class time learning than in just "scrambling notes."

Figure 4-4 shows an excerpt taken from Cornell Chronicle (1998), the university newspaper[56] CourseInfo is described as a software that allows professors to build websites on their own without any deep knowledge in programming. Interestingly, it seems that there is not any significant change in the software architecture: course announcements, course documents, staff information are also widely used by current Blackboard and other LMSs. Within a year, Cane and Gilfus founded CourseInfo, "a service company to help professors building websites for their courses" (Interview 2011). Soon after, the process, and the goal itself, shifted from building websites into building tools that would help the creation of websites. The high demand for websites and the burdensome amount of work, as Cane explains in his interview, led the group to the idea of building a generic do-it-yourself model[57].

With this background and within a year, Cane and Gilfus founded CourseInfo, "a service company to help professors building websites for their courses" (Interview 2011).

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[56] As I am writing the dissertation and get prepared for the new semester, I realized that the configuration of Blackboard has no changes as all the items described here are the major items I work with.

[57] It should be noted that business and entrepreneurship are supported in many ways in American Universities that provide their students with knowledge and sometimes even funding for starting their own businesses.

Soon after, the process, and the goal itself, shifted from building websites into building tools that would help the creation of websites. The high demand for websites and the burdensome amount of work, as Cane explains in his interview, led the group to the idea of building a generic do-it-yourself model. CourseInfo became a software product for education aiming at "easy use" by faculty. Within their first year of service, CourseInfo had twelve universities as clients[58].

> After much development, the CourseInfo software […] allows to create a website that includes a general front page for course announcements, with links to pages such as "Course Documents", "Staff Information", "Assignments" and "Communications". An educator can choose to put any information on these pages, making materials such as syllabi, course rosters, sample exams and links to other relevant Websites available to students. Also, group project chat rooms and discussion boards are available through CourseInfo, and students can link their own personal e-mail accounts on Web pages. Educators also can post surveys and quizzes, which can be quickly graded and analyzed.
> A major goal of Course Info is to keep programming to a minimum for faculty members. No knowledge of html, the technical language for creating Web pages, is necessary.

Figure 4-4: Excerpt from Cornell Chronicle

E-venture

After the merger of Blackboard and CourseInfo, the executives began to seek new streams of capital. Chasen describes that time as "an era when venture capitalists seemed to invest in just about any company with a lowercase 'e' in front or '.com' at the end."[59] Thus, on the same day as the press release announcing the merger of the two companies,

[58] http://www.youtube.com/watch?v=SIblJ7cbFCg

[59] Michael Chasen, Small Business Award 2009. Keynote Speaker. Part 1 and 2. Uploaded Aug. 8, 2009. http://www.youtube.com/watch?v=XbtiCnVW2O4 Retrieved on 09/01/2013.

a second press release announced the "successful completion" of a private equity financing with Ching-Ho Fung, introduced as a *leading* (the emphasize is mine) local entrepreneur with a successful experience in growing hi-tech companies. However, it seems that the new Blackboard team took the first serious step towards capitalizing on their new business model with the release of the new product called Blackboard CourseInfo 3.0 on July 26, 1999. On the press release from Blackboard, the software is described as "designed for helping faculty to deliver courses fully online." The team announced a triple goal: to build on the industry leadership; to create the "absolute easiest" and effective education platform; and to pay back investors. The Blackboard CourseInfo technology became available at a special $4,500 annual license fee for academic institutions (for unlimited courses and users) with a $500 fee for a basic annual support package that could be purchased with the annual license.

After making their product available, it was necessary to establish a user base and a market of users. As a matter of fact, establishing good users would soon become a routine for the Blackboard producers. *Good users* are outstanding clients: universities that would purchase the software, accept the criteria of use, cooperate in further changes and updates, and be committed to keeping a user status, which would mean offering a fertile environment for the implementation of software, its maintenance, and its training for troubleshooting. Being a good user also meant having a commitment to creating a culture of Blackboard use within an institution: professors who would use Blackboard for teaching, students who would want to take online classes, and administrators who would commit to synchronizing the needs and desires of the other groups while making

technology work. The preparation of a socially-accepting environment became crucial for the use of this technology. Right after the merger of Blackboard and CourseInfo the new company started to publish different press releases and videos with examples of real students, professors, and administrators describing Blackboard as "a simple yet needed tool," "enhancing education," "freeing the student from the regime of the past," "freeing professors from exhaustion," and "giving administrators opportunities to lower the cost."[60]

Expanding Education Opportunity[61]

Even though there is no direct correlation found for this study, it seems that businesses such as Blackboard and CourseInfo both developed during a time when the American government was convinced to make educational technologies a priority of its own. The government's initiatives helped promote a certain discourse around educational technologies which along with the related laws helped these technologies to be viewed as social values.

Al Gore[62], the 45th Vice President of the US, is known in the public eyes for his prominent role in envisioning the infrastructure of Internet in entire education system in America and becoming a spokesman for this development. As stated on the official website of organization called the Internet Hall of Fame, Gore was one of the first

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[60] A collection of 60 videos shown on http://www.youtube.com/user/BlackboardTV Retrieved between 06/01/2012 and 04/02/2013.
[61] http://clinton5.nara.gov/WH/Accomplishments/eightyears-05.html Retrieved on 10/04/2013
[62] http://www.internethalloffame.org/inductees/al-gore Retrieved on 10/01/2012

government officials to recognize that "the Internet impact could reach beyond academia to fuel educational and economic growth as well." As a Congressman, he did create the High-Performance Computing and Communication Act of 1991 (the so-called Gore Bill), which allocated $600 million for high-performance computing. This helped in the creation of National Research and Educational Network (NREN) and National Information Infrastructure (NII), known also as the Information Superhighway. It became Gore's personal mission to connect "every classroom to the Internet by the year 2000".

Figure 4-5 shows an excerpt[63] taken from The White House's official website (Clinton-Gore Administration: A Record of Progress) shows the changes associated with the government initiative – significant student access for using computers and exploring the Internet as well as teacher technology training – and the funds for making educational technology a high priority:

> With the Vice President's leadership, the Clinton-Gore Administration has made increasing access to technology a top priority. The President and Vice President created the Technology Literacy Challenge Fund to help connect every school to the Internet, increase the number of multimedia computers in the classroom and provide technology training for teachers. They increased overall investments in educational technology from $23 million in 1993 to $769 million in FY 2000, and tripled funding for Community Technology Centers to reach at least 120 low-income communities. Through the E-rate program, they secured low-cost connections to the Internet for schools, libraries, rural health clinics and hospitals, benefiting more than 80 percent of America's public schools. They also increased investment in education research to ensure all children benefit from educational technology. In 1999, 95 percent of public schools were connected to the Internet - up from just 35 percent in 1994.

Figure 4-5: Clinton-Gore administration: A Record of Progress

[63] FY 2000 Budget, p. 67; National Center for Education Statistics, Stats in Brief NCES 2000-086, 2/00. Retrieved on 11/02/2013.

Beyond Technology and Business

In the press release of April 29 1998[64], Blackboard announced that it was in the process of merging with CourseInfo and as a result, two new products – *Classroom* and *Campus* – were in the process of development. Classroom was defined as a server software that allowed universities to "host stand-alone courses," including online syllabi, full collaboration tools, authoring tools, assessment wizards, student and course webpages, and many other features. Campus was then considered as a "scalable version" of Classroom aimed for an organization or institution to host numerous classes with some additional features like a virtual center and interfaces into existing administrative systems.

In the press release, Classroom and Campus are carefully highlighted as "IMS-based Course Delivery Tools" and Blackboard Inc. is defined as a *significant source of expertise* in designing the IMS standards. The same press release recognizes CourseInfo as a "*leading* web-based course management system" utilized by some "*leading* universities." Blackboard Inc. is also described as "*the primary* technical contractor to IMS" and "*a leading* provider of technologies that make the Internet more useful for teaching and learning." Another paragraph emphasizes Blackboard as a "*leading* participant" in the IMS standards, which was described as "a project sponsored by

[64]Blackboard Press Release Archive: http://www.blackboard.com/news-and-events/press-releases.aspx

Educom, a nonprofit consortium of over 600 higher education institutions, universities, and others." (All emphasis is mine.)

The Blackboard press releases during 1997-1998 were strategically crafted. Not only was the recently-merged Blackboard-CourseInfo LLC eager to publically show its connections with organizations such as IMS and Educom (affiliations with an already-existing powerful network within American higher education). An almost need for being recognized as a key player within these existing networks is notable. The high density of the words IMS and Educom in the early Blackboard press releases and the way that those connections were described made the exploration of those linkages suitable for this study. What is the significance of affiliations with groups such as IMS and Educom in the new field of eLearning technologies? Why it became so important for a new educational software company such as Blackboard to highlight its connections with IMS? In search for answering these questions, some new patterns emerged at a macro level; patterns that may show no direct connections to Blackboard developments but which are of a strong relevance with the context that provided for those developments.

The Network Configuration

Network is an inclusive yet analytic category for the study that resulted from a historical overview of Blackboard developments from multiple sources that will be cited in this chapter. *Network*, as it will be described and explained in this section, is result of a discourse and a comparative analysis among what are considered as parts of the network. For example, as the names imply, there is a semiotic connection between the Michigan Blackboard Users Group (miBUG) annual conference and the IBM 1041 User Group of

1962, the group meetings that mark the genesis of EDUCAUSE, the association for information technology in higher education. The history of EDUCAUSE – the merger of CAUSE (College and University Machine Records Conference) and Educom (Interuniversity Communication Council, Inc.) – shows that the idea of eLearning technologies in American higher education grew out from the gatherings of representatives among higher educational settings that operated IBM 1041 machine and became a movement of its own.

This section describes the dynamics within user networking and its growth through connections, associations, and relations initiated and established among representative groups within the American institutions of higher education, corporations, and government agencies as they emerged in the field of higher education soon after the end of World War II. It documents in details the eLearning technology dynamics from the early compassion of educators for educational technologies to the interest and vision of corporate that saw them as a new field for profit.

Early Technology Compassion and Interests

Figure 4-6: The Pressey Machine

A picture of the Pressey Testing Machine, patented in late 1920s documents that the idea of hardware in education does not start with the computers, as the idea of distance learning also does not start with the Internet and Internet applications. There is no doubt that both of them are rooted in a sincere desire for improving teaching and learning as an important human activity. It is, for example, a teacher's dream to provide students with visuals or hands-on activities on each topic. A freely human communication with no constraints in place and time, what may seem quite ordinary for the contemporary American society, has also been an always educator's dream.

According to A History of Virtual Learning Environments[65], it shows that as early as March 20, 1840, the Boston Gazette advertised what is described as the "New method of Short Hand" by Caleb Phillips stating, "*Persons in the country desirous to Learn this Art, may be having the several Lessons sent weekly to them, be as perfectly instructed as those that live in Boston.*" This is maybe one of the first recognized attempts to overcome the geographic constraints in the field of education. However, the idea of distance learning has been found in the official documents at the Illinois Wesleyan University circa 1872. For the first time, however, the concept is found in use in a University of Wisconsin-Madison catalog for the 1892-93 school year. Six years later, the first distance learning institution called University of Wisconsin-Extension was created[66].

In terms of hardware, even though the teaching machine (Figure 4-6) of Sidney Pressey, an Ohio State University professor of Psychology, seems rare for its time, the

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[65] A History of Virtual Learning Environments. http://en.wikipedia.org/wiki/History_of_virtual_learning_environments. Retrieved on 10/12/2013.
[66] A History of Virtual Learning Environments

way that Pressey described it, provides for an important theme on how to understand the developments to come many years later. The machine, the first of its kind known, was developed to provide "drill and practice items" to students. It was programmed as a typewriter carriage with a window that revealed a question with four answers. The student pressed the key that corresponded to the correct answer allowing so the results to be tracked by the machine simultaneously. This machine was an attempt to eliminate the grading time of professors. Pressey wrote that his machine would mark "the industrial revolution in education."

Those sporadic attempts to industrialize education became consistent especially after World War II, when more attention and capital were placed in technology developments. Norbert Wiener's *Cybernetics* (MIT Press), a book about human-machine communication in which cybernetics is defined as "the scientific study of control and communication of the animals and the machines", is a clear indication of what has captured society's minds and interests during that time. Soon after, such attempts became projects. For example, KUHT, an American public television station aired the first televised college classes for the University of Huston in 1953. By the mid-1960s, more than one hundred thousand semester hours were taught through this medium. KUHT also made Harvey White's physics lessons available in thousands of American public school classrooms. The total enrollment for these lessons exceeded one hundred thousand students[67].

[67] A History of Virtual Learning Environments

While the modern history of technology developments in American education is full of similar advancements, there are two culminations that paved the path for the eLearning technologies we know today: one was Programmed Logic for Automated Teaching Operations (PLATO) and the second one was Advanced Research Projects Agency Network (ARPANET). PLATO was a system that featured multiple roles online, including students, instructors, authors and a user called multiple, which was brought into play for different demonstrations. The program was initiated by the University of Illinois in the 1960s and run there for about four decades before its final termination in 2006. ARPANET, a program commissioned by the US Department of Defense in 1969 is the Internet as we know it.

While it makes sense that such large projects as PLATO or ARPANET were projects of publically well-recognized actors such as University of Illinois or the US Department of Defense, it remains unclear how CourseInfo or Blackboard LLC managed to overcome the reputation and maturity of PLATO and become important players in the market of educational technologies. It should be emphasized, however, that the political, technological, and economical dynamics within the American Higher Education have provided for a variety of new companies or product software, all with the promise to make the American education better yet with differences (as we will further see in the next paragraphs) in how those companies were organized, in their working philosophy and relationship with others. Before discussing the details, it is important to start with the

data that marks the institutionally birth of the interest on the eLearning technologies to become.[68]

IBM 1401 Users Group

In 1962, under IBM (The International Business Machines Corporation) sponsorship, 22 data processing directors from American universities and colleges organized as an IBM 1401 Users Group in an annual meeting in Chicago. IBM 1401 was a computer for processing data stored in the punch cards. Those 22 individuals were representatives of "the first real users" of the computers for processing administrative data in the institutions of higher education.[69] The group, who called itself the College and University Systems Exchange or CAUSE and had as an objective to share information about the new administrative systems "they were beginning to develop", marks the first recognized connection of that kind between representatives of higher education and the corporate sector. The meeting marked the beginning of what would become a powerful network within American higher education.

From the corporations' perspective that always have seen the field of education as a "source of innovative ideas" and a mechanism "to gain market acceptance"[70], this meeting was announced as an effort for maintaining a technology transfer (knowledge and skills) as well as getting users' feedback. As the developments show, these kinds of

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[68] A History of American Learning Environments

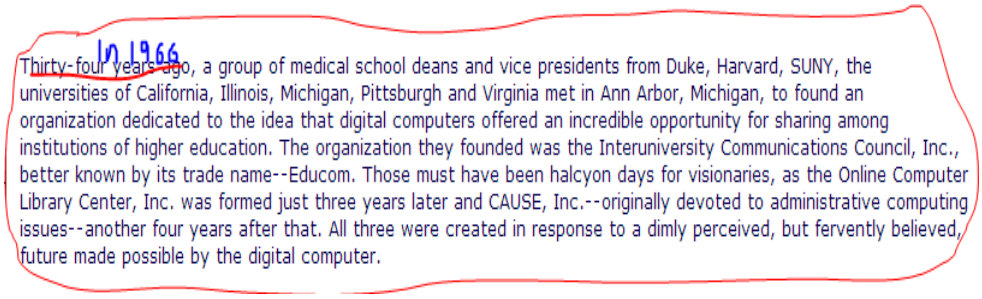
[69] Unless otherwise stated, the source of the information on the developments of technologies on the field of education for this chapter is taken from the official website of EDUCAUSE: www.educause.org

[70] The EDUCOM history by Robert. C. Heterick Jr. http://www.educause.edu/about/mission-and-organization/history/educom-history Retrieved on 01/05/2 014

meetings mark the roots of a large network, an infrastructure culturally constructed to support the use of technologies in education. When American colleges, universities, and libraries were open for accepting new organizational tools and especially looking for additional funding, the producers of those tools were looking to expand the market for their products. These corporations had money dedicated to the expansion of their business and the expansion of the market. As machinery producers moved toward offering a larger variety of their products (from punch cards to computers and programs), they were careful to maintain their ties in education by establishing connections with steady users for their products, by expanding the number of users, and by extending the user capacity through offering new products. In each case, offering grant money for research and sponsoring user gatherings became a catalyst for network advancement to create diversity in products and to develop new users.

Among themselves, representatives from the American colleges, universities, and libraries began to be sorted, organized, and reorganized in a variety of groups and alliances under a variety of goals: first for the purpose of "sharing information on new administrative system" or "new administrative operations" (early 1960s), then "on the provision of information to support decision making" (circa 1975), to later arrive at the idea of using computer technology for "improving teaching and learning" (in 1990s). In each case, a variety of sponsors from the corporate world played a distinguished role in those processes. Beside CAUSE, another good example of the way colleges, universities, and libraries became organized is the history of two other parallel associations created within the American higher education system: Educom and Online Computer Library

Centers, Inc. Thus, while CAUSE was formally created in 1970 as a non-profit organization, Educom (officially known as Interuniversity Communication Council, Inc. in 1966) was initiated as an organization that aimed at sharing information among medical schools of some of the elite American universities that had been working together on a five-year grant for administrative operations. In addition, Online Computer Library Centers, Inc. was created three years later (See Capture 4-2).


Thirty-four years ago, a group of medical school deans and vice presidents from Duke, Harvard, SUNY, the universities of California, Illinois, Michigan, Pittsburgh and Virginia met in Ann Arbor, Michigan, to found an organization dedicated to the idea that digital computers offered an incredible opportunity for sharing among institutions of higher education. The organization they founded was the Interuniversity Communications Council, Inc., better known by its trade name--Educom. Those must have been halcyon days for visionaries, as the Online Computer Library Center, Inc. was formed just three years later and CAUSE, Inc.--originally devoted to administrative computing issues--another four years after that. All three were created in response to a dimly perceived, but fervently believed, future made possible by the digital computer.

Capture 4-2: Technology as a means of sharing in education

Even though all and each of these three associations were incorporated and started working closely with the American government on a variety of issues such as copyright and the law for a fair online use, a part of the money supporting their growth came from the business world. Thus, the W.K. Kellogg Foundation renewed the initial $650,000 grant for Educom with another for $600,000 in 1969. In 1973, the John and Mary Markle Foundation awarded grants to study the involvement of cable TV in education, and the Exxon Education Foundation granted $66,000 to study state agencies and centralized computing services for colleges and universities. In the following years, Educom received significant amounts of grant money, the largest single grant being the million-dollar grant plus the equipment for startup of the BITNET information center given by

IBM. The BITNET information center became the provider for e-mail connectivity for most of the institutions of higher education in the US and abroad.

It should be emphasized that donations and charity remain respected traditions in American life, where individuals take pride by practices of sharing or giving back to the community. A similar tradition with both religious and philosophical roots is well known in other parts and cultures of the world. It is also a tradition for big corporate and powerful individuals to establish foundations that continuously support programs and activities that assumedly add value to community and American society. Well-known foundations have been a great support especially for schools and educational institutions.

Besides being widely recognized and celebrated, these big gifts are used to also show wealth, prestige, and to leave legacy. These gifts, especially in the field of education, allow individuals and corporations alike to build up their public images. In a more sophisticated way, they also create personal connections with institutions and their officials. There are instances when such gifts are given in exchange for certain services that usually remain unknown for the public. In certain cases, grant money is given to institutions and individuals in higher education in support of research in certain fields and with certain products (or what Robert C. Heterick, Jr. calls it “advancing market”). In the United States, the grant money given by corporations and individuals is recognized, and encouraged, by law.

Although the analysis of the amount of profit gained through technology investment in education compared to the grant money provided by those corporations exceeds the scope of this study, it shows that these connections allowed the corporations

to strategically develop networks that would provide for their own products. The years after World War II were characterized by intensive relationships between corporations and institutions of higher education that gave these corporations an entry point into higher education through mutual research projects and technology developments. Interestingly, by 1975, terms such as “management systems” and “information systems” were often used interchangeably with “administrative data processing.” For many, this was a signal for the transition “from a focus on the use of computers to process data to a focus on the provision of information to support decision making.” Later on, the trend switched to technologies that would “enhance learning,” a term that has become quite popular when speaking about technologies in education.

The expansion of technologies in education occurred so quickly that the network soon involved a plethora of technology producers and publishers. American government agencies also became a larger part of this network, even though their status was different. Not only was the American government involved in the process through the funding of technology projects in education, but it also supported these projects publically and politically by crafting legislation to support growth in the field. The network started expanding the ties abroad as well.

This network growth, and the corporate influence that guided its developments, did not happen in unnoticed. Many feared the influence of the profitable corporate approaches in the field of education. For example, in the *Science* magazine issue of October 1966, James Grier Miller, one of the early presidents of EDUCAUSE network, elaborated his rationale for the founding of the network stating the following:

> The dilemma of the information explosion affects all aspects of higher education, the primary function of which may be viewed as information processing broadly conceived, including the creation of new information (research), transmission of information (teaching), learning of information by students, and storage and retrieval of information in libraries. Administration and management of universities also involve many sorts of information processing…Emphasis must remain on the human goals of educational institutions, rather than the gadgets[71].

The developments of Blackboard, however, do not necessarily confirm that the emphasis remained on the human goals of educational institutions. A reconstruction of power was involved and intertwined along with the developments of the user network and technology.

Learning Technologies as a Social Value

The connections, associations, and relations among the representatives within American higher education, corporations, and government agencies are foremost social constructions of powers already recognized as power of exclusion, power of inclusion, hierarchical power, and power to program specific networks.[72] In general terms, the associations within the American higher education were products of a power to program user networks, networks aiming at a culture of technology use in education. Which of the technologies – Blackboard or Moodle or MOOCs – gains prominence matters not, as technology could not change the nature of the association. Not only were associations such as CAUSE and Educom developed to gain power by continuing to program user

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[71] www.educause.edu

[72] The categories of power here, with slight differences, meet Castells' categories on A Network Theory of Power (2011). https://www.google.com/webhp?source=search_app#q=network+power+castells Retrieved on 12/12/2013.

networks within education, but the powers and prestige of these associations were legally recognized. For example, in October 2001, the Department of Commerce awarded the management of the edu domain to the EDUCAUSE merger making the networking power of inclusion and exclusion a reality.[73] In these terms, to be recognized as an educational institution one needs to have a certain Internet address under the edu domain. In contrast, any institution or organization whose Internet address is not within the edu domain has not sufficient credentials to be publically recognized as an educational institution.

Apparently, CAUSE and Educom used their own social prestige and knowledge to first become organized on their own, and then to merge to continue networking by the same set of cultural means. Those processes were constructed as extensions of the user network originated in the IBM users groups. Each of these associations, before and after their merger, established institutional powerful relations through publications, memberships, monetary support, educational services, and mutual recognitions among educational institutions, corporations, and government agencies. The following sections describe some of the specific forms of powers that helped make eLearning technologies a social value and that helped promote the growth of the user network.

Publications

The networking developments during the years were associated with an increase in the number of new publications which emerged within the field of higher education

[73] http://net.educause.edu/edudomain/ Retrieved on 02/12/2014

devoted exclusively to the new communication technologies. Not only were the publications suggestively sharing the latest information in technology developments in education, but they also became a tribune of recognition for individuals, groups, and institutions for the so-called achievements in the field of new technologies, planting the social-value seed of eLearning technologies within the system. Each of the associations maintained its own publications. For example, the list of prominent publications includes *Cause Information* newsletter (1972), *Educom Bulletin* (1966) (replaced later by Educom Review), *CASUE/EFFECT* magazine (1978), *Member Institution Profile* (1979), *Cause Monographs Series*, *Cause Annual Report* (1980), *Educom Networking* (1983), or *Campus Computing Strategies* (1983). The bimonthly newsletter *Manage IT* addressed the so-called global trans-campus issues, including federal legislation related to technology matters in higher education (1990). Some of the publications took interesting suggestive names such as *What Presidents Need to Know*, a publication of the Higher Education Information Resources Alliance (HEIRalliance), published first in 1992.

Recognitions

Each of the associations developed its own recognition system that also involved accepting and exchanging recognitions with members of the corporate world. For example, CAUSE began to recognize the so-called "achievements within the profession" in 1980. These were awards established with sponsorship from the so-called Information associates that aimed to identify both "exemplary leadership and professional

experience."[74] An example of one of these awards is the CAUSE/EFFECT Contributor of the Year, a recognition award for Exemplary Leadership and Information Technology Excellence (ELIITE Award). Beginning in 1995, Educom awarded four to six medals per year to interdisciplinary societies. In addition, the Best Practices in Professional Development, Service, and Applications, an award with the sponsorship of PeopleSoft, was announced in 1994.

Recognitions by the corporate world became also commonplace, once again illustrating that the user networks in higher education did not grow in isolation. As an example, CAUSE was given an award for the best overall desktop publishing program given by Communication Section of the American Society of Association Executives. Also, this society recognized CAUSE's leadership in its "Associations Advance America" competition. In 1996, CAUSE received "Excellence in Campus Networking" sponsored by Novell and the Keystore Award for the best membership technology association.

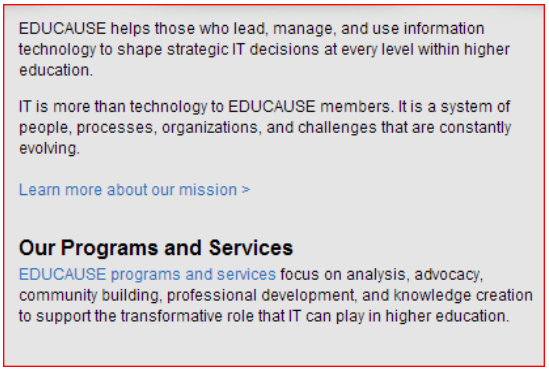
Membership

Membership in associations is a prominent form of power especially when the members are prominent institutions with recognized social power. Membership expresses power of both exclusion and inclusion as associations separate those to accept from those who are not accepted and those who do not show any interest in being members of the association. Membership means power to share, propose, vote, make collective decisions,

[74] http://www.educause.edu/about/mission-and-organization/history/cause-history Retrieved on 07/09/2013

and work in a collective direction. Most of all, membership is a form of what can be described as shared spirit and obligation. It gives its members a totemistic power or the symbolic power of association.

Network power of an association is usually measured by the number of its members and on their power for making decisions and influencing the decisions of others. The rapid growth in associations focused on eLearning denotes the increasing importance of these technologies and allows for stronger connections within user networking. According to the Roots of EDUCAUSE shown on its official website, in 1970, CAUSE meeting in Denver counted 28 individuals that represented 25 university members. By 1972, however, the membership had increased to 150 institutions and 300 people. By 1995, the organization counted 1000 voting representatives and more than 1300 campuses and by 1997, the number of participants became 3200. Since then, the organization has been characterized by a strong membership involvement.


EDUCAUSE helps those who lead, manage, and use information technology to shape strategic IT decisions at every level within higher education.

IT is more than technology to EDUCAUSE members. It is a system of people, processes, organizations, and challenges that are constantly evolving.

Learn more about our mission >

Our Programs and Services

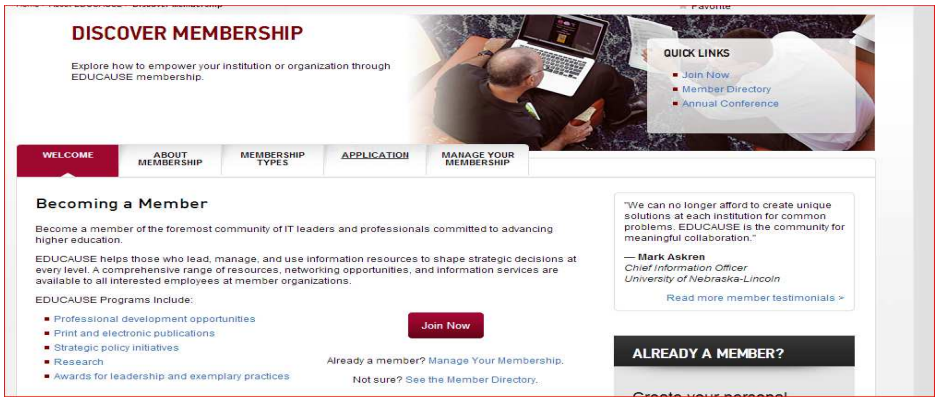
EDUCAUSE programs and services focus on analysis, advocacy, community building, professional development, and knowledge creation to support the transformative role that IT can play in higher education.

Capture 4-3: IT as a cultural system

It should be emphasized that the network of associations is a formal powerful infrastructure on its own: in order to achieve the network goals and maintain powers, the members are actively involved in academic and public activities. Subnetworks in the form of committees are an indication of those well-organized activities. For example, CAUSE created such committees as CAUSE Professional Image, National Issues Committee (1997), and CAUSE Consistent Groups. (1985) Educom also created

respective groups such as HEIRAlliance, aiming to provide “a single voice on higher education information technology issues.” The Coalition for Networked Information was created later, aiming to “advance scholarship and intellectual productivity through the development of a rich array of networked information resources.” All these different forms of subnetworks demonstrate how associations use their connections, affiliations, and relations to maintain and expand their networking powers.

The official website of EDUCAUSE states: “As Internet growth surged, CAUSE joined Educom’s Networking and Telecommunication Task Force to encourage federal support for a National Research and Education Network.” The development speaks in favor of a few interesting facts: First, the three big networks within the American higher education (CAUSE, Educom, and the Association of Libraries) were created one after the other somewhere between late 1960s until they merged in late 1980s. Initiated as simple gatherings of authorized executive individuals from certain institutions within the higher education and under the financial support of interested corporate outside academia, those groups developed into quite active networks starting in late 1980s. Second, as shown on



Capture 4-4: The power of membership

as shown on Capture 4-3 and 4-4 the activity of the network has increased tremendously after officially embraced the idea of the Internet applications as *a need* for a better education. It would not be accurate, however, to point to the Internet developments as the solely catalyst of the networking in higher education. In contrary, the Internet developments gave a legitimate motive to make the network powerful. The Internet just became a totem for a further networking.

In the mid of 1990s the idea of computers, Internet, and Internet applications in education became a goal of networking rather than a networking means. Individuals with careers and high reputation in the American higher education gave up their appointments to pursue executive positions within the network. Its offices moved in the DC area to fulfill the role of negotiators between the American Government and corporate affecting the law in favor of an implementation of the Internet technologies in the American education. It may seem as those affiliations gained power when they managed to incorporate in their structures members from the corporate, from the government, as well as by enlarging their membership globally. In reality, the role of the user network in the higher education is to provide others with standards so the technologies can be compatible. Considering that the networking power is the power of making decisions and building the right institutional structures to domesticate eLearning technologies in the American higher education, it becomes clear that the power belongs to the big players in the market of eLearning technologies.

The Internet totem

Starting from the mid of 1980s, not only were the American higher education institutions engaged in research about effectiveness of computer technologies, but they also initiated their own products and put them to work, sometimes for a profit. A serial of projects ended up with their first products for educational use. For example, projects like EDUNET, where a small number of research universities contributed $10,000 per year to explore the "viability of national computing resource sharing", came up with products such as Educom Financial Planning Model, used in more than 50 institutions by 1987. BITNET[75] Information Center became the major source for email connectivity not only among American universities but abroad as well. Under the Educational Uses of Information Technology (previously called Educom Software Initiative) there were quite a few accomplishments: Educom Code (1985-1987) which addressed the use of intellectual property in electronic formats, The Networking and Telecommunication Task Force (NTTF) created in 1984 as a response to the rapid evolution of computer networks on Educom member campuses, and Equal Access to Software for Instructions that addressed the needs of people with disabilities.

In the debates that associated the growth of the Internet with a national telecommunications policy, NTTF assumed the role of a facilitator between government, corporate, and higher education. As officially stated, the new focus required "rethinking

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[75] According to the history of EDUCAUSE, in 1983, Educom convinced IBM to provide a grant for creation of the BITNET (Because It's Time NETwork) Information Center. For nearly a decade, BITNET provided the major source of e-mail connectivity for most of higher education, both in the United States and abroad. At about the same time, the Educom Strategies Series monographs were launched with publication of Campus Computing Strategies, edited by then-president Jack McCredie. Coupled with the growth of campus networking and personal computing, Educom was launched into a period of explosive growth.

in light of the ubiquity of personal computers and expansion of broadband networking." From then on, the main focus would extend to a transformation of teaching and learning. As stated in the history of EDUCAUSE, "In concert with publishers, technology companies, and several university groups, National Learning Infrastructure Initiative (NLII) began working on the Instructional Management System (IMS) to provide the fabric that would tie together efforts to make high-quality instructional materials available on the Internet." The project, under which Blackboard, LLC. was contracted to assure operability standards operated as *an entrepreneurial effort* (my emphasis) to define a set of specifications for computer-mediated materials. According to Robert C. Heterick, Jr. 9th president of Educom:

> In the earlier mainframe and minicomputer period, computer vendors had used higher education as a source of innovative ideas and to gain market acceptance. With widespread adoption of the personal computer, technology strayed away from a small priesthood of experts and toward the broader populace of everyday professionals. The Educom Corporate Associates Program (CAP) was started in 1984 with a rudimentary vendor exhibit at the conference that year in Boston and CAP membership rapidly grew to100. Educom's membership [went up] to 600, and under the guidance of Director of Conferences Sue Ellen Anderson, conference attendance rose quickly to 3,000. By 1989, vendors were spending millions at the EDUCOM annual conference to showcase their products.[76]

E-learning: A Way of Life

With the Internet developments and funding available, E-learning became "a way of life"[77] in many higher education institutions. The public project A History of Virtual Learning Environments in 1990s published in Wikipeida.com indicates hundreds of

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[76] www.educause.edu

[77] I am paraphrasing here Don McIntosh on Trimeritus.com (See www.trimeritus.com/vendors). Retrieved on 10/14/2013

related projects (small and big), many events, and quite a commitment of academia to e-Learning[78]. There are multiple trends in those developments: One, even though many individuals put their ideas, skills, and ambitions toward E-learning technologies and distance learning, the ones that succeeded were located to some of the American university centers recognized for close ties with the network. Two, similar developments occurred in parallel in multiple centers that would include, but are not limited to, those in the US, UK, Europe, and Australia. Some of the groups and institutions used funding from the European Union or from their own governments. Three, sharing knowledge and experiences through national and international professional gatherings became a fertile ground for expanding the networking connections. Respectively, there were also new related academic work (courses and programs) developed in the institutions of higher education in all fifty states. These developments make one think that the ground was finally set for what Pressey has called once "the industrial revolution in education". What Pressey could not foresee, however, was that even though education grounded the new fuel for the information industry, it also got quickly projected as a "new field" of industry and started facing the consequences.

The following are some important projects developed over time: Athena, a project which started around 1983 at MIT and which aimed a campus-wide computing environment for educational purposes, evolved during time into a system of shared services including features such as "printing online materials, electronic email and

[78] History of Virtual Learning Environments in the 1990: http://en.wikipedia.org/wiki/History_of_virtual_learning_environments_in_the_1990s. Retrieved on 01/12/2012.

messaging, bulletin board conferencing, on-line consulting, online teaching assistant, on-line help, assignment change, access to system libraries, authentication for system security, naming-for linking system components together and a service management system". This contributed on the development of a so called "Assessment Management System" introduced by Formal Systems Inc. of Princeton in 1990. At University of Maryland, Kent Norman created HyperCourseware, an electronic classroom that included online syllabus, online lecture notes and readings, synchronous chat rooms, asynchronous discussion boards, online student profiles with pictures, online assignments, exams, grading and a seating chart. Also, Soft Arc launched FirstClass, made for Macintosh platform. Over 50,000 k-12 students in classrooms were connected by Online Learning Circles offered on the AT& T Learning Network.

In Sydney, Australia, Webster & Associates released the first of several graphical course systems with LMS included. Similar systems for online classes were released in the following years in other countries such as PortaCOM from Danish State Center for Computing in Education, FirstClass on a Mac Server at Open University (UK), and NKI Distance Education in Norway. In 1995, European Commission establishes the European Multimedia Task Force aiming to "analyze the status of educational media in Europe" including all cultural services and products that can be accessed via TVs or computers. University of Southern Queensland, Australia started its fully online program using a system that linked together online discussions, course materials, and online submissions of student work. WSB (World Wide Satellite Broadcasting Inc.) developed a satellite-based distance learning using synchronized video and audio courseware. The content is

delivered by a so-called content distribution system to Windows PCs and covered countries such as Malaysia, Thailand, and India. Technikon South Africa (TSA) merged with the University of South Africa (Unisa) and released the first version of their in-house developed online learning environment (TSA Online) in 1996. DigitalBrain founded in 1997, is described as "the most heavily used learning platform in the UK". In October 1996, the Fern Universitat Hagen (German OU) described its web-based virtual campus as user friendly and with powerful communication ability.

Expanding Connections

Three other forms of organization – Sharing, Standardization, and Unification – have helped the extension of network connections through the power of inclusion. As already shown, a large number of LMS projects were being created at the same time from many directions and in many world locations. With academic gatherings as a networking catalyst, standards and unification prove the existence of network and also fuel the networking power. The U.S. Department of Education's Office of Educational Technology assisted this process by commissioning a series of white papers on various aspects of eLearning technologies and by hosting workshops to discuss the issues. Blackboard is a social production of this user network since the company was initially hired by EDUCAUSE to maintain the standards of IMS tools. The following are a number of examples that show how the networking expanded its connections.

With the developments of communication technologies, virtual meetings became available, extending the boundaries of an exchange of ideas and experiences by

expanding the number of the participants. These tools used for holding meetings remain essentially similar to the tools used in distance education as they provided for a similar experience. The first net-based "virtual conference" was held in conjunction with the 16th World Congress of the International Counsel for Distance Education in 1991. The project used email lists and Usenet groups – similar to the ones used in online classes today – for communication for the first time. Today, these online meetings, conferences, and presentations are a regular networking occurrence.

Two other projects show how those organizational forms help a networking in favor of a technology expansion. Murray Goldeberg, for example, started the WebCT project at the University of British Columbia in Vancouver, Canada, in 1995. The project was funded by a $45,000 grant from UBC's Teaching and Learning Enhancement Fund. In May 1996, Goldberg introduced WebCT at the 5th World Wide Web conference held in Paris. Based on what is described as a "positive reaction" from the conference, the company started to give away free licenses to their software raising the number of the institutions using WebCT to nearly one hundred within six months. WebCT is described as "the world's most widely used VLE" operated by millions of students in 80 countries.

In addition, Cisco has embarked on an initiative to design "practical, cost-effective (technology) networks" for schools since 1993. By considering network maintenance, one of Cisco's senior consulting engineers, initiated training for teachers and staff for maintenance of school networks. In 1997 these trainings led to the creation of the Cisco Networking Academy, which teaches networking and other information technology-related skills, preparing students for future learning and careers in

engineering, computer science, and other related fields. Since its launch, the program has grown in all U.S. states and expanded to more than 150 countries, using a curriculum taught in nine different languages. An expanding number of students participate in these academies in high schools, colleges and universities, technical schools, community-based organizations, and other educational programs around the world.

At a fall 1995 meeting of the "Partnership for Distributed Learning" (a consortium of US schools organized by University of North Carolina, Chapel Hill), a group of people from Virginia Commonwealth University (VCU) proposed the development of a web-based course management system named "*Web Course in a Box.*" They described the basic system features and proposed that interested schools work together to develop a working prototype of this system. The VCU group began work on the prototype with input from the consortium. The first beta version of Web Course in a Box was presented to the group in spring 1996. The idea for Web Course in a Box grew out of work towards creating a web-based interface for delivery of course materials to support VCU's Executive Masters in Health Administration.

The late 1990s can be described as an active period for developing eLearning ideas and programs from many different directions. Using corporate and government funding and through sharing, unification, and standardization, the user network within American higher education institutions managed to legitimate eLearning technologies and create an adequate infrastructure involving computers, programs, and human knowledge. The developments of EDUCAUSE itself are a good illustration of the significant role of the networking powers in the process of eLearning technologies. It is

during those processes that the associations, affiliations, and relations among representatives of educational institutions, corporations, and government agencies established themselves and expanded their ties all over the world, defining the social profile and outcome of products, such as Blackboard, and those associated with the products.

Currently, the largest LMSs in the field of education are Blackboard, Desire 2Learn, Moodle, and Instructure Canvas. A recent list, however, includes 172 proprietary and 66 open source LMSs that are considered active in institutions of higher education in English-speaking countries.[79],The next sections are dedicated to the construction of a hierarchy of users and an analysis of how their perceptions, values, and actions shape a technology in return.

LOCAL USERS

Introduction

When I insisted to describe Blackboard software from the lens of its users, I was influenced by the work of others on technology from a user's perspective. Otherwise, I didn't know exactly what to expect. I never thought that without a focus on users, the study would have been close to impossible. Technologies such as Blackboard software are technology of users. They exist through users' activity and are organized as such. Their intensive developments and updating is associated with an intense human work and

[79] Don McIntosh, Trimeritus.com (www.trimeritus.com/vendors). Retrieved on 10/14/2013

organization to maintain related skills and knowledge. It took thousands of years for the Mesopotamian plow to become an important tool in agriculture work; it took less than 15 years for the social profile of Blackboard to rise and then fade. Arguably described as one of the most efficient LMSs in higher education, the technical developments of this Internet platform for teaching and learning were mixed with, and deeply affected by, capitalistic practices, mentalities, and political battles between corporations and other groups. Blackboard software stands as a quintessential example of the tremendous impact of institutionalized power and collective work in educational technology developments. By documenting the user's involvement into the process, and user's transformation, this section highlights the links between technology and human work as a crucial factor in the software developments.

From User Networks to Local Users

What began almost fifty years ago as the IBM 1401 Users Group, a small group of 22 individuals, has already grown into a large and steady network of users that extend even beyond the boundaries of the United States of America. The emergence of these powerful user networks in higher education signifies the industrial developments, early business interests in education, and a neoliberal mentality extended especially in the public domain of education. Those user networks became powerful, because: they appeared with a social prestige associated with academia's name; they are made of educational institutions that have an institutional power over millions of people such as

students, professors, and employees; and they received influential support from the corporate world and gained great legal powers from the government.

These network actions, in return, have been associated with certain social outcomes. As an example, institutional networks hold the power of creating a cultural landscape that would provide for the technology to become an educational value within. Through networking power, not only is a landscape of technology acceptance projected, but also the structures for domesticating technology established and enforced. *Eventually*, the networked institutions have the power, resources, and organizational ability to produce and maintain technology users.

The power, cannot, however, minimize the issues that arise within the cultural ambivalence of eLearning technologies. By domesticating such technologies, the institutions of higher education are exposed to issues that would appear almost foreign to educational institutions. Addressing these issues requires certain technical knowledge, skills, and organization and necessitates the involvement of practices and procedures that need training separate from the traditional institutional teaching and learning. The domestication of those technologies into educational institutions creates a whole new division of technicians, administrators, and managers who are imbued with new decision-making powers. The problem, however, is not with the decision-making capabilities of these employees, as they are usually well trained and quite capable in their positions, but with the fact that their decisions are based on objectives that do not necessarily meet the socially recognized goals of institutional learning. This dissonance provides for a dualism

of practices and mentalities within a higher education institution, laying the foundation for misunderstandings and conflicts.

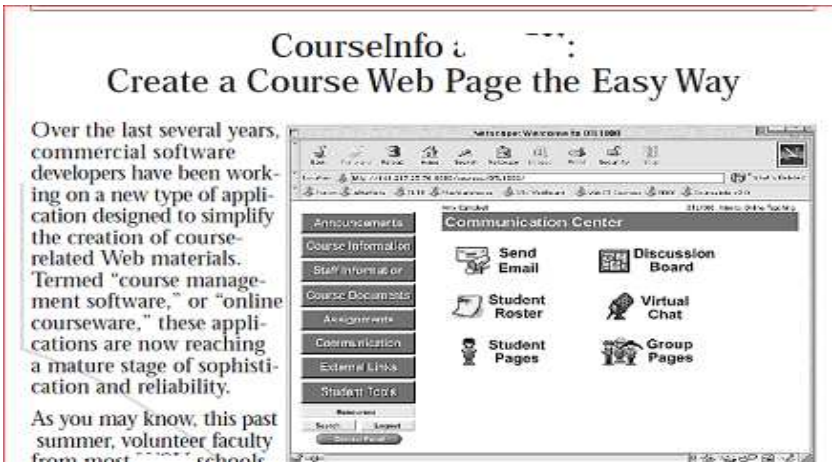
In general terms, the technology of Blackboard enables Internet users to visualize and organize learning on a computer screen in a lively manner through connections among humans, machines, and installed programs, usually described by the concept of network. The term *network* is described in this dissertation as such connections that share purpose. Locally, those connections of human-machine-program become an *institutionalized reality*, which means that they are programmed to adhere to, and channel toward, an institution's existing network (under the impression of helping with educational goals); that human actions and interactions through those connections are traceable and should cause recognizable outcomes (otherwise, human attempts would be ignored and the network would produce a null outcome); and that people are held institutionally accountable to technological processes based on how they are situated within the system.

Making a technology work within an institutionalized reality requires the production and maintenance of users. This becomes imperative especially during technology failures. Technology failures are associated with undesirable outcomes and learner dissatisfaction. Yet, they are valuable in terms of software learning, feedback, and improvement. Although modeling the variety of human behavior seems nearly impossible, technological outcomes are corrected by shaping that model. This process is circular: based on contractual terms, the producer makes the product and its terms of use available to the institution; the institution, which accepts the product and the terms of use

accordingly, builds the appropriate structures both for producing and maintaining the users (student orientation, faculty training, programs, workshops, online classes) and for making the technology work, an effort that is barely recognized. The following sections explain how the technology of Blackboard became involved in the structures of a specific institution of higher education, the University.

Big Users

After almost 150 years in service and with almost 100 years of accreditation, the University is a nationally-recognized research public institution that serves nearly 30,000 students in more than 370 academic programs through 13 schools and colleges. It has seven centers in different locations. Its main campus alone comprises 100 buildings. As stated on its official website, the University[80] works to "create knowledge and prepare a diverse body of students to excel in an increasingly complex and global society." Its vision is "to become the model public research university engaged in the urban community." The University is also well known for having a very diverse student body. It also maintains affiliations with more than 100 institutions worldwide. From this information, it is difficult to detect any



Capture 4-5: Blackboard idea shows only insignificant changes

[80] The information shown on here is taken from the University's official website.

of the known "technology needs" that are usually described with the developments of LMSs. It is a known fact, however, that the University is home to many non-traditional students who work full time and many who are parents. Online education seems a desirable choice for many at the University.

Publications from nearly fifteen years ago provide some insight into the process for selecting the Blackboard LMS for use at the University. One of the institutional publication from that time (Capture 4-5) seems to suggest that the decision was made by a small group rather than through any institutional study or consultation. It is also noteworthy that the new application was not tested or examined based on results in teaching or learning; the decision seems to be made based mostly on how "easy" it was to use and how "excited" some students and faculties felt about it, two terms already familiar from the advertising campaign of Blackboard. This same focus on ease and excitement over functions and results can be seen in materials published for everyday use.

For example, *Teaching Matters*, published by the University's Office of Teaching and Learning on October 1999 (Volume 3, Number 5), describes the software as one of the applications that "are now reaching a mature stage of sophistication and reliability." It adds that "[t]he most popular feature of CourseInfo is its ease-of-use" and that the faculty members reported that "they could make a good start on their course Web sites in just a couple of hours."

It would seem that a public institution with a long teaching tradition, and well-established union rights would have not made such an important decision as the use of

technology for teaching and learning without significant faculty involvement in the process. As the OTL article suggests, a group of volunteer faculty members from most of the University's departments helped the institution to evaluate WebCT, WebCourse in a Box, and CourseInfo. However, articles from that time do not provide clear information on the way these faculty members were involved. Many questions remain unanswered: How many people participated in the study? Or, from how many schools and for how long? Were participants exposed to at least two LMSs or not? How did participants learn to operate the software?

The article states that the volunteer faculty members "overwhelmingly" recommended CourseInfo, from Blackboard, Inc., as "the product of choice" for the school. Based on that decision, the University purchased a "one-year campus site license for [Blackboard's] CourseInfo" and installed it on a central server for faculty use. The institution also agreed to provide "hands-on training in CourseInfo."

A similar suggestive discourse can be recognized in "Technology in Learning," another Blackboard-related article on the second page of the same newsletter. In this instance, one of the University's professors is cited saying that she used the software as both a teacher and a student in another school, exclaiming that "Blackboard was addicting." After using Blackboard.com in teaching an IT course, the professor is states that the reaction from her students was overwhelmingly positive. The article notes, "When asked what she would say to those who claim that online learning can be passive and isolating, [the professor] answered that the instructor must do two things: design the course to facilitate participation, and require communication from students." Even though

both of the details are crucial for online teaching, it is clear by now that this is only an optimistic yet superficial view. Teaching online is teaching with new and sometimes uneasy tools not to mention an unskilled audience.

U-Net

The University network (I will call it here *U-Net*) is a complex and sophisticated network of computers, programs, people, rules, and procedures under the University's jurisdiction. At the University, the Blackboard software program is a part of the University's Pipeline, a single sign-on portal available to students, faculty, and staff that as an important element of U-Net provides free, secure access to other University systems and services.

Pipeline allows a member of the University to access University Connect (the email system offered by the University), OneCard (a payment system), the University's online self-services (a system of services such as registration, paying money, checking graduation requirements etc.), Application Status, and much more. The University Pipeline seems built on an image that would remind one of a university campus: the interface is designed to look like a college campus or that the categorization within the University Pipeline follows the logic of organization in the University's campus.

The connections among tabs, buttons, and links that symbolize buildings, people, and services seem to follow the same organizational logic. All Anthropology courses, for example, along with the profiles of the anthropology professors and students appear

under the Anthropology Department's tab. Yet, the information shows respectively under courses tab or under the University directory.

The architectural idea of U-Net seems as old as any other human efforts for conserving a nature snapshot – trees, buildings, sky, sun, and even birds – on a piece of paper. Compared to a painting, picture, or blueprint, the U-Net images created by the Internet technology, however, have some notable characteristics. First, by using computers, computer programs, and Internet connections, the design involves text, symbols, and animation. Second, the design reflects and provides for an already-established institutional structure. It should also allow and provide for easy communication among the University's schools/members and help facilitate financial exchanges that include tuition payments, paychecks for employees, and other similar transactions. A significant difference between these two conceptions of using U-Net is that if an "image on paper" remains static in front of a viewer, an "image on screen" is designed to actively involve "the viewer" as human actions are part of the design.

U-Net is a virtual, non-stop set of connections on the Internet that allows and provides for, the University's administrators, faculty, students, and guests to communicate and conduct related transactions and activities at any time. Through symbols, text, and visuals, U-Net appears on screen as an animated matrix with multiple tabs, the clicking of which allows for different screen appearances, each of which shows different possibilities for transactions. When conducting business there, it seems that one needs to virtually locate a building, and then virtually go from one floor to another until finding the right room. This process remains problematic for some users. Sometimes, one

may need to click every single tab to find the desired information or activity; no one is "there" to answer any questions about the use of U-Net. As some of the University Computer and Instructional Technology (C&IT) technicians have explained to me, "searching locations" on U-Net should be considered a regular task with the Internet technologies; they don't really understand why people feel frustrated by these kinds of virtual activities. Mostly, the technicians believe that a user's lack of understanding and skills may be the largest reason why users are frustrated with the U-Net system.

The portal has two access levels: the first makes certain information accessible by everyone who can reach the website and the second, which requires institutional access ID and password. As a general rule, however, the information available to these second-level users, the authorized users, is differentiated by their actual status as student, faculty, or administrator. There are differences in access even among people within the same category. A common example would be the differentiated access among faculty members; although all of the University's faculty members may potentially have the same institutional status, only the faculty member (or members) assigned by the University to teach a particular course would have actual access to that course. The same is true for the students: only the students who register for a course can have access into it. Everybody else, including all levels of administration, would need the assigned faculty member's permission to access the course legally.

I have been using this portal for many years, both as a student and as an instructor. There are tabs shown in the portal that I have never used; I do not know how these tabs are used. The portal looks like a miniature version of a university's campus – a

virtual campus uses tabs, layers, buttons, links, and hypertext instead of buildings, floors, offices, and classrooms. The difference is not only on the virtual appearance shown on a screen vs. their real locations in a campus. Navigating this interface is only a part of the routine with the other, the most important one, fulfilling a transaction. For example, finding the building of Anthropology on the screen may not be the problem. The transactions completed there (filling out an application, making a request, or simply finding some information) may be more difficult than it is in reality. The other difference easily perceived, but quite significant: using U-Net allows one to explore the virtual campus and conduct business virtually with minimal physical movement; things are done just by clicking.

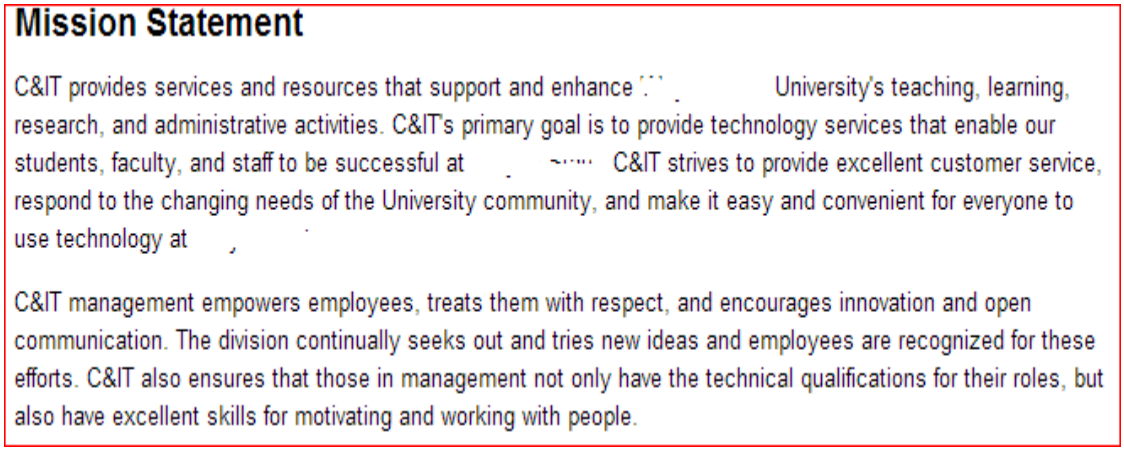
Generally speaking, not only are learning activities and services *translated* into hyperlinks and buttons that appear on a single computer screen, but they are also semantically linked to and organized based on known institutional functions. Under the University's jurisdiction, which involves a few campuses in different locations, the computers, servers, application software, power, and the Internet are connected, organized, and established as a whole system of its own. The system is continuously under control, maintenance, and work. The people involved at different capacities are an active, or the most active, part of the system.

Obviously, the involvement of humans in the process is one of the peculiarities of the Internet technologies: the success of software like Blackboard seems to depend on

what is described as usability.[81] The value of the software's visuals – the setup of links, buttons, and images – is not just aesthetic. Even though the colors, fonts, and configuration play an aesthetic role, their real value stands on their usability: activities and services are get done (or "messed up," as Ben, one of the Blackboard analysts, says) by just clicking. The degree of human involvement in those processes requires a degree of usability: software's success is often measured by the number of actors and their satisfaction while operating the software continuously.

In order to keep users satisfied with their operation of technology, the University has created an entire department called Computer and Information Technology (C&IT), which provides technological services and resources that support teaching, learning, research, and administrative activities. As shown on Capture 4-6, the goal of this division of the University is to "make it easy and convenient for everyone to use technology. The C&IT division is a team of people (conventionally called the Blackboard team) in charge of maintaining, testing, updating, and troubleshooting the Blackboard LMS. At the University, the work of this team, whose job also includes faculty training and support, is of same importance as the Blackboard design and updates.

[81] An easy use and learnability of human made objects.



Mission Statement

C&IT provides services and resources that support and enhance University's teaching, learning, research, and administrative activities. C&IT's primary goal is to provide technology services that enable our students, faculty, and staff to be successful at C&IT strives to provide excellent customer service, respond to the changing needs of the University community, and make it easy and convenient for everyone to use technology at

C&IT management empowers employees, treats them with respect, and encourages innovation and open communication. The division continually seeks out and tries new ideas and employees are recognized for these efforts. C&IT also ensures that those in management not only have the technical qualifications for their roles, but also have excellent skills for motivating and working with people.

Capture 4-6: C&IT mission: easy and convenient use of technology

Blackboard on U-Net

The results attained through a single computer center called server, appear simultaneously and at different levels. Users' statuses determine how they can affect the system and how those results are displayed. For example, a student no longer has to follow the traditional path of registering for a course: finding the course in the school's catalogue, going to the registration office, waiting in line, letting a clerk know the information, and getting registered, a procedure that would result in recording multiple entries: student's account, course roster, and registrar. This entire process can now be done through the Internet with a few clicks from a computer at home. A student can access the University's website, click on the list of courses, and, when user's status allows, complete the registration for an available course. As a result, an entry is automatically recorded to the student's Blackboard account, the university account, and the so-called Stars account. The entry is associated with financial changes (a bill

automatically shows on the student's online account), and the student would then become eligible for a grade and credit for that course at the end of the semester.

Only people who still remember the old processes of registration know how much time is saved and how much headache is avoided by doing this work online. The change, however, has two significant implications: the software is configured based on the processes and connections already established at the University (student registration, class roster, billing services, registrar's marks or similar tasks), and this software implementation is associated with changes in procedures and roles inside institution. For example, there are no more long lines in the registration office and perhaps fewer people work there. Yet, there is also a new need for highly-functional and secure servers and software. A relatively large number of people are needed to take care of software and hardware, and new work must be done to instruct others to operate the software and hardware. The outcome of all of those processes depends on how people, technology, and knowledge are organized on a certain place and during a certain time which is how this assemblage is settled to work at the University.

In this respect, if Blackboard is a software package used to administer many courses to many learners. The University's Blackboard is an application of that software based on the premises that as the company releases different software features or versions, people in charge of Blackboard at the University may adopt and implement certain versions or certain features. The University's Blackboard software is installed in four of the University servers. New versions or new features of the software are chosen, tested, and retired by a group of people who work for the University; virtual connections

are available only for people and positions with authorized access from the University. Therefore, as much as the University software depends on the Blackboard software developments, the organization and implementation of the software – and the people and knowledge associated with the implementation – remain local. The associated issues are mainly detected locally; any related solutions and decisions are also locally made.

Blackboard is a web-based system enabling technology for "anytime, anywhere" access to learning content, delivering content, and administrating content. In general terms, Blackboard allows learners to authenticate themselves, register themselves for courses, add and change learner's personal data, interact with course-content and course-participants, take assessments, and personalize the interface. The University's Blackboard is a server-based, enterprise level LMS; it is used to manage and deliver different types of learning environments through the web browser, including asynchronous learning environments. It also has full capability of tracking, reporting, and managing many kinds of learner data, especially that of learner performance.

The University's Blackboard is structured so that all learning functions are centralized and organized into a single system, enabling efficient access to these functions via layered interface navigation functions. While it seems reasonable to have everything online, it is also difficult to navigate it especially under the conditions of unfamiliarity. As shown on Figure IV-7, the information blocks on the Welcome page (as seen on October 18, 2013) are organized into three columns and six rows, each presenting a hyperlink that leads to other pages. For example, if I click *My Courses*, it shows the

courses I take as a student during this time. If I click *Courses You Are Teaching*, it shows the courses I teach that semester.[82]

How to use the Faculty resource tab	Announcements	My Organizations Plus
Report a problem	Echo 360 Personal Capture	My courses Courses you are teaching
Tools and resources	Internships and job search	
Browser test	Copyright notice to student	
Prepare yourself	Blackboard Catalyst Award Winner	Courses you are enrolled No specific courses Blackboard basis for students
Search in the Library Catalog	My calendar	

Figure 4-7: Blackboard on my screen

The second page is divided into three columns only, each with one single block: Course Search, Course List, and Course Catalog. Course Search has a window and a *Go* button. Course List has a small button, Manage Course List Module Setting, on its upper right corner. Course Catalog has a similar button, Open Course Catalog in a New Window. Another button at the end of the block reads *Browse Course Catalog*. Horizontally, there are six tabs: *My Blackboard, Content Collection, Archived Courses, Faculty Resources, Student Resources*, and *My Career*. Apparently, *My Blackboard*,

[82] This is the multi-user role, one of the features publicly discussed on Blackboard patent.

Content Collection, and *Faculty Resources* are based on the individual activities of a user. Faculty Resources contain the following content information: Blackboard Latest Features (Summary, Global Navigation, Item Analysis, Inline Grading, Fill in the Blank, and Retention Center). Next column's name is *Need Help?* It contains resources for immediate support. Echo 360 Personal Capture appears again in this page. Then Browser Bugs (Mozilla Firefox). Another tab: *Restore Course Role*. *Nifty Notes* (How to do stuff). The current *Nitfy Notes* contain two notes: *How to hide my courses* and *How do I set up Extra Credit in the Grade Center*. TRC Faculty Teaching Travel Grants: $1200 (Let the World know what You're Doing! Suggestions block. Office for Teaching and Learning Resources. Blackboard Basics for Students. (I was self-enrolled just by one click! 10/18/2013 11:53 am). Calendar is one of the tools that has not been working satisfactorily. The marks I have put there for my students, do not show properly on their sides. It states, however: "The Calendar is a tool that instructors use to provide students with dates of courses related events. …Not every instructor uses the Calendar, but it proves to be very useful when they do…" The technology glitches are not unexpected.

The University's Blackboard displays some wide-known functionality features of the LMSs, such as security, registration, delivery, interaction, assessment, tracking, reporting, record keeping, integration, personalization, and administration. The University's Blackboard has a centralized management of all of the above functions called Administration. While University Blackboard assures protection from any unauthorized access to courses, student records, and administrative functions, Administration is designed to manage the functionality of these features. As stated,

access IDs and passwords are institutionally provided. Some of the features, such as online registration, delivery, and interaction, seem to be taken for granted as the only components of online education. However, there is a difference between online education for a single course and online education for many courses. For example, building assessments, administering assessments, and the collection, tracking, and storing of assessment data are complex and challenging tasks if they are not well planned. Equally challenging ate the tracking of learner data, reporting (extraction of the tracking results), and record keeping. Some later features as facilitating reuse (searching and recombining courses), personalization (configuration at different levels of LMS functions, interfaces, and features by administrators and learners), and integration (exchange of data with external systems to facilitate enterprise-wide tracking of learner performance and transfer of user-data) have been added over time to make the system as a whole more functional and integrated.

Blackboard Babies

The term *Blackboard Babies* is used symbolically for online classes. Online classes are sometimes described in terms of American fast food production and of the work done on a Ford assembly line. Other times, online classes are perceived as self-taught classes. In reality, online classes are technological spaces of human communication and negotiation that aim at providing institutionalized learning. The social and cultural construction of online classes shows how the learning materials are organized online, how the channels and clues of communication are deployed, and how

an evaluation system is negotiated for grading student's work. One must recognize both that Blackboard classes are not provided, but are created by the instructors, and that there are layers of access and different perceptions of how technological features can be deployed differently to design online classes. Blackboard is in charge of designing the features, yet the Big User is in charge of allowing institutional access to certain features. Additionally, faculty or course designers have free hand to design a course the way they want based on the technological features they can access. Here is how a local Blackboard administrator explains the process:

> Email from the System Administrator[83]:
>
> As far as the new features for Blackboard, yes there are many! I especially like the new cloud-enabled features that allow students to create a social profile and share it with other institutions. Unfortunately, due to FERPA privacy laws, we may not be able to turn on this feature depending on what student data ends up on Blackboard's servers. We have to be able to ensure that we protect student's privacy especially as required by law. We are in the initial planning phases of our next upgrade, if it does not get implemented by mid-summer we will have to wait until I return from maternity leave to upgrade further unless [the University] wants to pay for someone from Blackboard Inc. to run the upgrade.

In general terms, American higher education is organized around recognized areas of knowledge. Individuals who want to gain certain skills and knowledge have the opportunity to choose among different programs, attend the classes offered by an institution, and, if successful, attain an official recognition as a proof for their education. As a rule, an institution of higher education is responsible for offering appropriate space

[83] Personal email.

during appropriate times for the meetings during which a professor is institutionally appointed to lead a group of students in a course of knowledge and skills in that area.

Within LMS software such as Blackboard, such practices are somehow different. At the University, an online class offered for educational credits is still an academic course with specific, approved academic goals, assigned to a specific faculty member (who agrees to teach it) during a specific semester. Generally speaking, a course is a mutual agreement between the University administration and a department. Once an online course is approved and appears in the University course catalogue, it also appears on the Blackboard site. If there are no institutionally-recognized academic restrictions, any of the University's students can register online. An online class is solely administrated by the assigned faculty member or members, who can change the virtual environment to fit the way they want to run the course.

The virtual environment of a class is made of a set of tabs, usually including a tab for announcements, syllabus, content, and contact information. The faculty member or members in charge of the course can use a set of tools to change and personalize these tabs that and to fill an vast amount of space inside the virtual class with different levels of content, assessments, tests, interactions, notifications, presentations, and other course materials. Within Blackboard, there are other compatible technologies such as Wimba, Respondus, Echo 360 inserted to enhance online interaction (Wimba and Echo 360) and online testing (Respondus). At the University, these features are usually available at the request of a faculty member.

For my online classes, I prefer to get most, if not all, materials online long before the first day of the semester. I usually teach introductory Anthropology courses and have been able to find an Anthropology text that comes with a cartridge, which is an electronic material relevant to a certain text. This has saved me time with Respondus, the program that enables online testing, as I can carry the cartridge from one semester to another and can modify the testing materials from there. I usually begin designing a course by looking at the course description published by the University. Accordingly, I have a set of course and learning objectives. All readings and assessments depend on the course objectives. The course work is structured into a weekly framework so that there is at least a couple of online activities for each week. Course activities include readings articles, watching movie clips, participating in online discussions, and completing tests and quizzes, as well as activities that require research and work offline (field observations, for example). PowerPoint presentations are an interesting tool for presenting work online. Safe Assignment is also a good tool for making students aware of important issues – such as plagiarism – in academic work.

The Social Construction of Blackboard

Blackboard babies support technological activity at another level: Blackboard becomes a virtual social space of communication imbedded with social and cultural meanings through its online classes. There can be no Blackboard without those virtual spaces filled with human activities and communication (in writing, images and symbols). Those virtual spaces, designed as an imitation and extension of the established

educational social spaces, employ some different communication tools and clues for achieving the same goals. For example, if a PowerPoint presentation is a good way for presenting in a classroom, a PowerPoint presentation with a recorded voice has also proven efficient in my online classes. However, because software and software operations are not always taught in advance, some of the electronic signs are not widely understood and at some levels, a learner's misunderstanding and confusion seem to associate some of those activities. The work in a virtual classroom has mostly the same institutional goals and objectives as the work in the traditional classrooms, yet the social meanings and practices can be different as the Internet technologies for teaching and learning are not widely shared and mastered by learners.

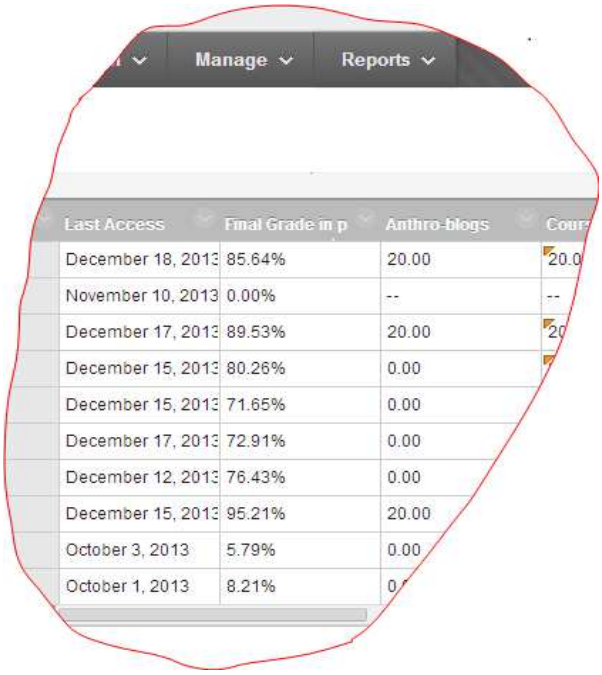


Figure 4-8: Virtual spaces filled with meanings

The Online Grade Center: As an online student, I loved the ability to go online and check my grades. It gave me a whole picture of how I was doing in class. Seeing the class averages allowed me to compare and understand my progress in a larger context. When I started using Blackboard for teaching, I initially loved the idea that Blackboard could be setup to instantly show the grades as a letter and a percentage. As useful as this

calculation by Blackboard may sound, grades remain a sensitive social matter and cannot be left only to Blackboard's "discretion."

Ben also likes the Grade Center, but appreciates this tool from a different perspective. He believes that Grade Center is an interesting tool in Blackboard because, "you really can do stuff there. Actually," Ben adds, "it can be fun."

Points for all of the assignments (discussions, tests, quizzes, papers, and PowerPoint presentations) will show in the Grade Center once they are created; the instructor also has the option to show students columns for deadlines and points (assigned and received). The most interesting part of the Grade Center for both Ben and me is that columns can be categorized and a final grade can be calculated instantly based on given formulas. This instant change has a helps to maintain a positive and professional relation among faculty and students. For example, I give a syllabus quiz at the beginning of the semester. I believe that reading a syllabus is an individual task that should not be graded, yet must be done. As my past experiences show, there are students who are uninterested in reading the syllabus, which can foster practical issues for these students. In my course, I found it helpful to enforce a shared knowledge of the course's practical rules by creating the assignment of a syllabus questionnaire. But how many points would be good enough to satisfy a student's perception of "worthy points" and a faculty's "guilt" for giving points of "no worth"? Blackboard has the solution: grades can be calculated by categories that have different weights in the total points of the final grade.

Date of Last Access: Blackboard has features that may appear as only "technological" at the first sight. For example, why is there a column showing learners' last access of the

site? Although these technological details may appear superfluous, they can be helpful in record keeping and in administering an online course. For example, sometimes I may receive emails that look like:

> Dear Ms. Gelki [*sic*],
> I am writing in regards to student and Montgomery G.I. Bill recipient […] concerning the Spring/Summer 2010 semester.[…] received an 'F' grade for ANT 3150 901. Please help us determine if the failing grade was earned or if it was due to an unofficial withdrawal (i.e. the student stopped attending the class). If this is the case, please **indicate the last date of attendance** for the student. If necessary, the date of last assignment or exam completed by the student may be utilized.
> This information is required for reporting to the Veteran Benefits Administration (VBA) in compliance with regulations under the Montgomery G.I. Bill, Chapter 30 of Title 38 U.S. Code.
>
> More importantly, submission of this information may assist in limiting the debt the student incurs with the VBA for withdrawal from this course.
> A signed Release of Information form is on file with our office. The student is also receiving a CC of this email.
> If you have any questions concerning this matter I can be reached by replying to this email or via phone at […].
> NOTE TO STUDENT: Please be advised that if no last date of attendance is reported to our office within two weeks from the mailing of this notice the Department of Veterans Affairs will use the beginning date of the semester as your last date of attendance and therefore may create an overpayment for any and all funds paid to you for this course.
>
> Thank you for assistance in this matter[84],
> […]

When issues like this arise, I can log into Blackboard and check the student's attendance and progress one more time. By law, the last day of access is the last day of a student's

[84] Personal email.

attendance. For instance, Capture 4-8 shows that one of the students had submitted zero assignments. Yet, the last day shown on the access column indicates that legally the student was attending class until November 10, 2013. There are students who may be in this kind of attendance until the end of the semester. They would fail the class, yet would receive any financial benefits based on an attending the class.

DropBox: The Digital DropBox has been an issue in the past. The DropBox was a virtual area where students dropped/uploaded assignments. The issues seemed to arise at all points in the process of using this tool. There were times when the uploaded document was corrupted. There were other times when an assignment would be saved in the DropBox as a draft, which prevented a faculty member from seeing it. If an assignment showed in the DropBox, a faculty member had to download the document to a computer, save the file, leave comments, save it again, upload it back with comments, and then record the grade. The elimination of DropBox has been an important step in the process of Blackboard improvements. Once an assignment is currently uploaded to Blackboard, the document is accessible by a faculty member without the need to downloading or save the document. The script allows for comments to be inserted into the text, for highlighting words or phrases, and for feedback for the student. The grade is recorded on the same page.[85] The new method is more reliable than the use of DropBox, an example of a technological modification that has helped the instructor-user.

[85] Only the last week (01/29/2014) I realized a change in the grade recording. The new version required the grade to be recorded twice. They have that fixed now.

Extra-Credit: It is a common practice in the United States for students to ask for extra assignments or extra points when they are unsatisfied with their level of accomplishment in a certain course. The issue with online classes is not how to offer extra assignments, but how to record the extra points so they do not interfere with other students' grades. Blackboard developers have recently resolved the dilemma by creating Extra Credit as one of the grading categories, allowing instructors to give students no points in that category without affecting their grade.

Anthro-Blog: Online learning allows for greater anonymity, a condition that may be either off-putting or comforting for those in the class. I was attending one of the University workshops and stopped at a table to sign my name. Two girls stood at the table greeting everyone. When one of the girls was getting my tag ready, she smiled and said, "Hi Mrs. Gellci. I took an Anthropology course online with you." I smiled back, but felt guilty at the same time. Shouldn't I be able to recognize the students of my online classes when I see them?

Since that time, Anthro-Blog, an individual introduction by students with a picture and greetings, has become one of the online class activities. Many students have resisted placing their image in the virtual classroom; they email me saying that they do not feel comfortable putting their pictures "out there." One semester I had a student who said that her job didn't allow her to "expose" herself on the Internet. I have had students who also claim religion reasons for not putting a picture on Blackboard. I also see that students love using pictures of their loved ones (cats and dogs included). I realized that

regardless of my specific intention, people consider blogs as personal spots and they want them to be filled as they see fit. These are also spaces of negotiations.

Power Users

Power users are employees hired by the University to take care of Blackboard software and in this regard, to take care of the Blackboard users. They work in Computing & Information Technology (C&IT), which is the University's central IT organization in the Division of Academic Affairs. Based on their job descriptions, power users can be members of the Blackboard system support team, which is the group who upload, maintain, and troubleshoot the Blackboard software for an institutional use. Power users can also be members of the C&IT Help Desk team, who are employees hired by the University to respond to questions, issues, and concerns that University learners have in regard to technology. The main task for this group is customer service. Its contact number is advertised at a variety of locations in an attempt to make that help desk the initial point of contact for all learners with technology issues. The Blackboard system administrator is also one of power users with a special designation; this position serves as a connector between the University and the Blackboard Company. Although these three clusters are situated in three different locations within the University and although each has different supervision, both of the teams (Help Desk and Blackboard Support) and the Blackboard System Administrator (S.A.) belong to the same large division within University, work under the same higher supervision, and exchange job-related information on a regular basis. Among each other, power users address the help desk as

Tier 1, the Blackboard cluster as Tier 2, and the Blackboard S.A. simply as the system administrator. The exchanges among the three are regulated by and enforced through a set of rules and procedures that after being approved by the supervisors of each group, gains institutional power and become rules.

Power users are an analytical term that attempts to describe a group of people based on both the kind of job they do for the University and their social position relating to Blackboard technology. The term was articulated in a meeting when one of the attendees used it to address a group of people from Tier 2 who were working to update Blackboard. As it will be explained, it also illustrates the power of decision-making about and changing use of Blackboard within the University. Power users can include people of various job descriptions, covering system analysts, system technicians, and system administrators. Close supervisors are members of their respective teams. It should be added that based on their positions within each cluster, these people have knowledge and skills on how the software works, but usually have no deep knowledge, or no knowledge at all, about software coding. Power users, depending on their positions, can, potentially, articulate their opinions and make a difference regarding software use within an institution. However, only some of the power users, especially those in the role of the system administrator, can transmit the opinions, concerns, or issues to Blackboard Inc. and actually make a difference in the overall software. System administrators are usually considered as connectors between Blackboard Inc. and user institutions.

During my fieldwork, I spent long hours observing and interviewing power users. I sat next to them, watched them navigating on the screens of their computers, asked

them questions, heard them helping others on the phone, and saw their conversations on the University online chat. I attended meetings, workshops, and training sections with these power users and other employees interested in Blackboard. I also socialized with some of those people in different social occasions.

It is difficult to clearly delineate the work done by each cluster of power users at the university, because regardless of what they do individually at their desks, the process usually involves the work of more than one person and the outcome is considered collectively achieved. By attending different meetings, training sessions, and software update discussions I came to realize that the groups of attendees were inclusive but never static. Software testing was done individually by the S.A. or the members of the Blackboard team, but people from Help Desk participated in testing on different occasions.

In order to create a picture of how Blackboard technology works and what this means for Blackboard users, I will describe different events and conversations in detail as they happened. Instead of describing the dynamics of human relationships, I have chosen certain data from my long ethnographic conversions with some of the power users to show how they understand, define, and see the user relationships.

Meeting Exceptions

The power users at the University have a high work ethic. Their jobs place them in charge of avoiding technology issues or solving them in a timely manner. Once notifications of issues are received and recognized, there are procedures on how they are

treated. Chloe, another Blackboard senior analyst at the University, explains to me that if an issue arises, the solution usually comes from the team member who receives it. The information may come by phone or can be described in a chat, sent by email, or even mentioned in following conversation:

> We have the obligation to solve issues as soon as possible. However, officially, we have a 48 hours bridge to respond. As soon as we receive something that we can't solve it, we let the caller know that we will contact him or her back. We, then, make the issue known to the rest of the team. We make it a priority and we keep contact with the individual who experienced the issue. The obligation is even stronger especially if the complaint comes from a faculty. An issue experienced by a faculty can be like a false alarm…just lack of understanding on what can be described as inner workings of a system…things that remain unknown for regular users… And that is normal. We know how to use a cell phone but we don't necessarily know how a cell phone works. There are times though when what is described as "this is what I realized…" can be a real issue, kind of a bug. We would love to hear about them…I mean, we don't like bugs, true…We just know that there are bugs, so it is better when we recognize them and then fix them. Sooner is better than later. So, we work together to fix them.
>
> Diana: *Are there times when you can't fix a bug or have no solution*?
> Chloe: *Yeah, there are times like that.*
> Diana: *So, what happens then*?
> Chloe: *There are procedures. This is how it works: if the issue is received by the Help Desk and not resolved there, we receive the [ticket] and we work to solve it. If we can't, we do escalate the issue to the system administrator.*
> Diana: *Are there [any] consequences for being unable to solve an issue?*
> Chloe: *As a rule, we should be able to understand the nature of an issue, but we know that we are not always fully capable of solving a bug issue, for example. Only the company can do that.*
> Diana: *So, if you guys report an issue, how long it takes to get a solution from them?*
> Chloe: *Sometimes it can be fast. [S.A] would go and check what others say or do…like if others have experienced similar issues and found any solutions. That would be a happy ending for all. If not, she notifies Blackboard. Then, it depends…It can be quick. Sometimes, it can be weeks or even months…Yeah, I know…*
> Diana: *What about user?*
> Chloe: *User…We do the best we can to meet a user's expectation. We try to offer solutions... like temporary solutions. We are happy even if we were able to avoid confusion or chaos…you know? Because we are discussing about individual*

issues, but many times those issues affect large groups of people…students…even departments. Those issues can affect people's reputations. When technology fails, usually students describe it as "my professor sucks", etcetera, etcetera It also affects a student-teacher relation. It can go to one's evaluation…It becomes emotional sometimes. People will yell on the phone. They will send emails…Dramas…
Diana: *How do you feel about it?*
Chloe: *There are times when it becomes stressful. Good thing is that we know how it works and our boss knows…Our big boss also knows. So, what we can do [beside of getting a solution] is avoid coercion…offer strategies that can avoid some of the existing issues.*
Diana: *At different occasions, I have been able to see that you guys produce some small how-to-do articles explaining certain things. When do you do that? Or, what makes you understand that a certain article should be produced?*
Chloe: *It's part of the job. When we see that an issue becomes persistent…like more than one person calls about it, then we know we should share the information with each other. We try to eliminate confusion and frustration at the origin…*

When the Blackboard analysts believe that the problem is significantly important, they write a description and post it on the Q&A Database.

Diana: *Is that helpful*?
Chloe: *We hope it is. If people would do what we do when experiencing an issue…like we search for it first…then yeah, it should be helpful. And it is good for us as well. It's like you expand your own knowledge and skills and help others. If we hired someone new, then [knowledge] is there. It's like training. It saves time.*
Diana: *….but most of us call here first instead…True. And I am wondering why…*
Chloe: *We ask the same. Like it is there, literally, why don't you check it first?*
Diana: *Good question*. – Both laugh. – *I mean, for real. Like why do I call you first? I am thinking that there are more things involved, yeah?*
Chloe: *Culture? Would that satisfy your question?* – We laugh again.

From time to time during our exchange, Chloe moves her big, expressive eyes to the two computer screens in front of her. Our conversation would stop for a few seconds or minutes, during which I rush to complete my notes, take the time to admire her, or look at the pictures of her beautiful girls. I hate when people talk and I am limited to

writing things down; that disconnect seems to violate the mutual trust and honesty put in a conversation.

I turn to her, "*Gosh, Chloe, I don't even know how many times I have called you guys here… I have been like…Frustrated? Anxious mostly. I probably have annoyed you like… I'm truly sorry."* We hug each-other. As nice as she is, she wants to comfort me. She states, "*I just remember good stuff from you. You always email back and say thank you. You put smiling faces sometimes. I liked you before we met. Isn't that cool?"* (That day, I put a note on my notebook: "I know I am going to miss these people.")

Chloe is a part of the Blackboard Support team at the University. The official documents that regulate the flow of work among Tier 1, Tier 2, and the S.A emphasize that those teams take care of technology concerns within the University. I could not find a single document stating that people, and their emotions, also matter. From my observations, conversations, and personal experiences, the so-called technology support teams have taken an unrecognized, unofficial, and unavoidable role as negotiators. They negotiate between people and technology by trying to avoid coercion, to solve issues, or to educate learners at all levels. They also negotiate between learners and the University by offering their suggestions or "*even taking the blame*" for issues, as Chloe said.

Their job makes social sense. By solving issues, circulating and sharing information, and giving feedback to the developers of Blackboard, the software gets better and better and gains more market value. An exchange of emails between Chloe and I long before this study, shows another aspect of the job of power users:

----- Original Message -----
From: bbadmin@XXX

To: "Diana Gellci"
Sent: Friday, October 30, 2009 11:04:37 AM GMT -05:00 US/Canada Eastern
Subject: ANT 3150 section 200

Hi Diana,

Our department received a trouble ticket from one of your students, XXX who is desperately searching for the comments you provided for his paper. After taking a look at your course site it appears that the student's feedback was placed in the "Instructor Notes" section, which can only be viewed by you. Student's [*sic*] can't see anything that's placed in the Instructor Notes section as it's a place for you to store your own comments about a student/assignment. The attached file contains a screenshot that has a red circle around the portion used to provide feedback to the student's. Should you require additional assistance, please let us know.

~[Chloe]
----- Original Message -----
From: "Diana Gellci"
To: bbadmin@XXX
Sent: Friday, October 30, 2009 12:08:50 PM GMT -05:00 US/Canada Eastern
Subject: Re: ANT 3150 section 200

Dear [Chloe],

thank you. I am DEEPLY upset about all the trouble with the new Bb and I don't even feel I want to talk about it, sorry:-(

Diana
PS: May god bless our IT, LOL.
……..
Dearest Diana,

We sincerely apologize for all the frustration the new version of Blackboard has caused. We completely understand this particular version was not the most intuitive. Hopefully in the near future, when you're ready to talk, we can work together to see what we can personally do to help make this version work better for you. I'm also copying my boss on this message so she's also aware of the trouble you've encountered. We're more than willing to do anything that we can to help.

Just let us know:-)
~[Chloe]

bbadmin@XXXX

assignto=XXX
status=5
+-+

Software Updating

E-Mail from The System Administrator (April 25, 2013): As you are well aware, software is never perfect. There are always glitches that require fixing, and this requires some kind of intervention on the part of anyone who has that software installed. Also, people who use the software tend to want new features, or try and use the software in ways that the creators (aka developers) never even thought of. For these reasons, software is constantly updated by the developers to address these things. If it doesn't evolve, someone else will come up with a new/better/more attractive solution and people will jump ship and use the new software.

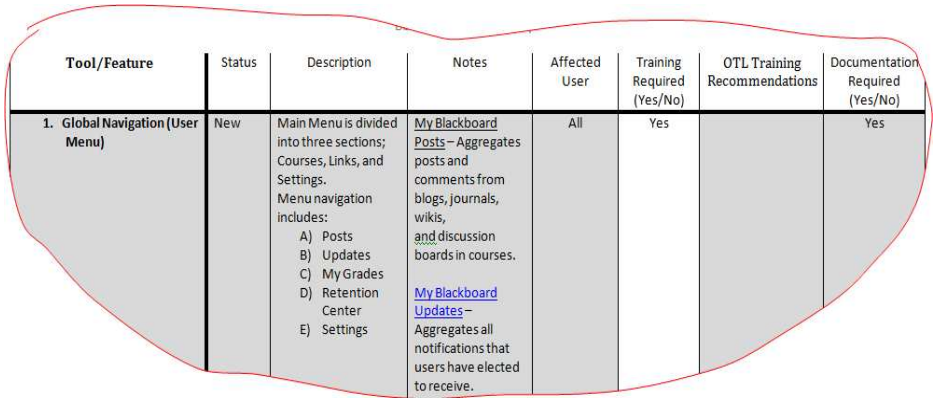
Because (in general) software is constantly updating, the software provider usually has limits on how many software versions they will support. Support is very important because if and when we do have an issue we can't solve ourselves it is good to be able to contact the vendor and get a fix. However, if we are not up to date, that support will either be severely limited or non-existent. In the Blackboard sphere, we try and install as many bug fixes and security updates as possible to make sure that our system is secure and that our end users can have a better experience using the software. Blackboard releases patches and small bug fixes fairly often, so we can fix many of these things without significant outage or downtime. However, many of the bug fixes and security patches are rolled up into what Blackboard calls a "Service Pack". These are released quarterly. The odd numbered service packs are largely bug fixes and the even numbered service packs introduce new features. We take great pains to test service packs before we make them live so we can fix a lot of the problems before our end users encounter them in the live system. We also have to make sure that we've revised training documents and videos as well as other support material and job aids to match the features and workflows of the new version.

Software Testing

The University auditorium located inside the graduate library has large windows with horizontal blinds that barely allow a glimpse of the outside if one sits closer to the windows. The large books inside the shelves behind glassy doors seem almost ancient. I have never seen anybody touching or referencing them for as long as I remember coming to this room for trainings or meetings. Lilly and Jacob will present some of the new Blackboard features they have been testing. Lilly is in a black suit. She is a student who works part time for the Blackboard team. With a fair complexion, soft eyes, and heavy hair, Lilly's face looks like the face of the girl in The Flower Girl painting of Henri Guillaume Schlesinger. I wish Schlesinger met Lilly and corrected his painting by adding Lilly's intelligence and ambition to his work.

Jacob is wearing jeans and a grey pullover. He is also a student who works part time for the Blackboard team. I remember him from some of my previous experiences with Blackboard. The weather is still cold outside, but that does not stop Susan, one of the Ph.D. candidates, from wearing short sleeves. I remember her from other Blackboard training sessions. She is loud and humorous. Delia, who works in distance learning, holds a doctoral degree in Instructional Technology. We took a graduate course together a couple of years ago. With a soft voice and wearing a lilac sweater and white shirt, Delia remains the icon of classic style. Both Susan and Delia teach online and work as Blackboard trainers. Chloe and Cornelia (or the boss of the Blackboard team, as they call her occasionally with full of respect) are sitting close to each other. I am sitting closer to the windows so I can watch the presentation and the audience.

Everybody looks at the big screen. Jacob and Lilly look at their laptops and take turns explaining the last changes they have been testing (see some of them identified on Capture 4-7). Blackboard version 9.1 has 25 changes, including a Global Navigation menu, Log Out, Test Tab, and others. The changes are shown in columns and sections Content Collection, Content area, Evaluation, Course Tools… Are these new features or revised versions of previous tools? Who is affected? Everyone? Professors? Is any



Tool/Feature	Status	Description	Notes	Affected User	Training Required (Yes/No)	OTL Training Recommendations	Documentation Required (Yes/No)
1. **Global Navigation (User Menu)**	New	Main Menu is divided into three sections; Courses, Links, and Settings. Menu navigation includes: A) Posts B) Updates C) My Grades D) Retention Center E) Settings	My Blackboard Posts – Aggregates posts and comments from blogs, journals, wikis, and discussion boards in courses. My Blackboard Updates – Aggregates all notifications that users have elected to receive.	All	Yes		Yes

Capture 4-7: Blackboard version 9.1 changes

training required? Once Jacob and Lilly start explaining the details, I understand how long it took to develop some simple, yet very important, tool such as the button that instantly changes the interface of Blackboard giving the course instructor the opportunity to see what shows on the student's side. (Susan gets excited: Yay!!) I have already described the issues with the Digital DropBox; many of these issues could have been solved with this added functionality. Obviously, the tremendous work of testing and getting feedback from people who maintain Blackboard is paying back; there can be no doubt that the software is getting much better. These observations about Blackboard led me to two different thoughts: that the software of Blackboard is continuously changing

and that there is much more collective work involved in the Blackboard software that is usually perceived.

> Delia: *So Blackboard hasn't changed that much…*
> Lilly: *Yeah, kind of…*
> Delia: *Which is good…*
> Lilly, who is explaining the Retention Center, continues*:…so I can choose to observe/monitor a student…*
> Susan: *What does it mean to monitor a student?*
> Lilly: *Everything I need to know as an instructor [about a student] is here…And here is the RC. That one in the corner…*
> Delia: *Where?*
> Lilly:*…Under the navigation center… then we can select the class from there.*
> Susan: *That's nice.*
> Delia suddenly asks the same question that has been in my mind since we started: *Who decides which of the features will stay*?
> Cloe: The system administrator perhaps…
> Cornelia: *Well, with some limitations…I mean, she always makes a rational decision so…But if there is place for suggestions, feel free... What's the thinking of that…?*
> Jacob: *…Now Blackboard will bring Blackboard Help.*
> Cornelia: *It looks that they have made a good change there.*
> Delia: *Is this going to work with all browsers*?...
> Susan: *This looks all pretty.*
> Lilly: *Under Audio…there are changes. This is important for instructors who have students with disabilities….also image has some changes. Some are just renamed. For example, Email is called Course Message now. This was so much confusing before.*
> Jacob: *Item analytics it breaks down statistics …especially for tests.*
> Delia: *I use Respondus, so how should I do if I wanted to change a question?…When you change the answer, do you have to re-grade it or it…*
> Jacob: *It will be graded [accordingly] automatically.*
> Susan: *So, let's do it.*
> Cornelia: *Yeah. Let's try that.*
> Delia: *It does well, so…*
> Lilly: *It changes automatically*
> Susan: *Yeah…*
> Delia: Well, that's nice.
> Susan: And colors are good…
> Cloe: Well, [the administrator] will decide if we will keep them.
> Lilly: Let's move on.
> Susan: So, how we decide what tools?
> Lilly*: The tools are there…*- She clicks and show all the tool buttons.

Delia: So who decides on the tools? The faculty?
Jacob: A lot of tools will be there already…
Cornelia:…So, if there is a function, feature, that is used, we will not turn it off until there is a legitimate concern or if it is off, we will not turn it on unless someone will make a request. You know what I mean? – Pause. All keep looking at the big screen.
Delia: Yeah. Thank you.
Chloe: Have you been using that Wimba Copy?
Delia: I did try but it did not work because I didn't have the advanced Wimba.
Chloe: So, basically, there are two service packs which fixes are relevant for us. From that, we will start to incorporate them…Then we will notify the rest for the new features or fixes.
Susan to Jacob: Will you do some more cool videos?
Jacob: Yeah, once we decide [what new features we will keep].
Delia: What do you think guys? You are the power user…
Jacob: Some professors will be mad, but…
Cornelia: You, what do you think? Because you are the super user so your opinion matters…
Susan: BbQ? – (For Blackboard questions) Laughs … – Ben is so funny with those acronyms. It makes me feel like we will be going to a party.
Cornelia: So all good to go? – Everybody shows approval. – Then we will let you know. Thank you.
A few minutes later, as she and I have a little chit-chat:
Diana: I want to document how a software like Blackboard comes into life and I guess I am getting it…You guys get together, check what is new from Blackboard, discuss it, test it, discuss it again, share with others…Get feedback…You know what I mean?
Cornelia*: Yes.*
Diana: So, I am thinking that it depends on where this all takes place…like University of Phoenix, as an example, may have a different perspective, correct?
Cornelia: Yes. But this is not the university. This is us.
Diana: Yes. But I mean you comply with the university policy…
Cornelia: We do. If something doesn't work, even if they say "Do it", we will tell them that this doesn't work…
Diana: OK. So they will change [their request] then?
Cornelia: Yes. I believe they will. Mostly they do.
Diana: So, if all of you guys are gone and 10 other people will replace you, then what is going to happen?
Cornelia: Good question. It is quite possible that things may be different. How much different? That is that I don't know. We do it this way because this is how we think it works. No one told us.

Cornelia leaves in rush. There are always so many meetings for her to attend. I stayed a little longer, finishing my notes from the meeting and making a list of the tasks that power users conduct.

Killing Emails & Writing Tickets

Writing emails and filling complaints is a large part of the job for those who work at the Help Desk. In both cases, their fingers move quickly on the board and they write and write and then click; write and write and then click again. Many times during my observations, I came to think of the nature of the Internet and software technology. There are people who have a passion for doing cool stuff, as the engineer said. I can imagine them struggling to find solutions as well as enjoying this work. However, that enjoyment would be never complete if there are not people who would accept the product that makes them excited and get involved in using them. There is no doubt that the Internet technologies have been beneficial to society. However, not everyone seems to have been able to recognize that the users are the other strong half of technology's success; users are constantly working to improve technology when they call a help desk because they "don't know" or because they are "frustrated" and "want to yell" at somebody or because they "want somebody do something" for them. In each case, the users trigger the system, shake it, and help to change a technology for better use in society. Then, there are the system connectors – people like Ann, Chris, Ben, and Chloe – who, through their knowledge, skills, and work allow the information to be circulated, software to be improved, and people to be continuously connected.

Diana: What do you mean by "writing a ticket"? It sounds like a police job…
Ann: I know… – She laughs. – It's an email. When something doesn't work… – She laughs. –I just said, "Something does not work…" Funny. But yeah…Something is not working properly with Respondus right now. Hold on a minute. I am sorry.
She read the received email on the screen, took a picture of it, typed something fast (I could read the word "patron" again), added the picture and …sent!
Later on I asked her how that works. She explains to me that as a Help Desk technician her job is to take phone calls, listen to callers and help them solve issues. However, there are certain issues that she may not be able to help. In a case like that, she *issues* a ticket. A ticket is usually a small report that describes an issue, recognizes the user, the time of issue, the name of the technician who received the phone call or email and a short description on what the technician did. This is always quick.
Diana: Then?
Ann: They [Blackboard analysts] receive it and take care of it.
Diana: How long it takes to solve an issue usually?
Ann: We say 48 hours. It's much quicker. If they know how to fix it, it's like in a few hours.
Diana: So there are things that don't work…
Ann: There are glitches or bugs…yeah. They can be fixed.
Diana: If they don't?
Ann:…not sure. I believe they address it to the Bb administrator.

After the conversation with Ann, I asked Chloe, Ben, and Cornelia in separate conversations about the processes of receiving complaints and writing tickets. They confirmed that a ticket is a written form in recognition of a technology issue experienced by an individual or group of individuals when operating Blackboard. It is a written document that usually circulates by email. As a rule, there are no tickets created if the issues is solved at the time that a phone call or email is received. If the issue is not solved at this first step, the ticket is moved to the Bbadmin, the Blackboard team email. Any of the Blackboard team members who check the Bbadmin email and read the email are able to investigate the issue and follow up with it until it is resolved. Usually an issue gets solved within one or two days. If that happens, the original user is notified by email

quickly. If a solution is not available even after two or more Blackboard team members discuss and work on the issue, then the ticket is delivered to the Blackboard administrator. The Blackboard administrator is not in charge of solving issues on her own, even though she always tries. If a ticket makes it to her computer screen, her job is to notify the Blackboard developers of the issue and waits for their response.

My conversations with the Blackboard Support team forced me to consider the various influences on our individual perceptions of technology. What affects this perception? Education? Ethnicity? Personality? Knowledge? Experience? Although technology is designed to function the same way for many users, there are still vast differences in perceptions of a single technology. Even though this would be a good idea for a future study, the data gathered in this study suggest that there is a correlation between how people find themselves situated within a technology and how they ultimately understand and feel about that technology. The following conversation with Ben is just the tip of that iceberg.

Different Bubbles

While trying to understand why my laptop and a projector no longer work together, Ben said: *"Click here…The page shows that…Then you click here…Then another page appears. You see?"* My laptop, a cheap Pavilion dv6 that Kris bought me as a Christmas present, had suddenly stopped cooperating with my projector, a MovieProjector that I use for my class presentations. One of the two, the laptop or the

projector, is not *behaving* and Ben will *make* them change their *minds,* as he claims. I am not enthusiastic.

> Ben: First, we need to understand what makes them upset to each-other. It should be something there, right? So let's click here. You see the page here?
> Diana: Page? Page…
> Ben: Page…It is called page…See… You click here, and then the email box appears on the screen…We opened that page… Then you click here…You see? Blackboard. Then you click here…You get the Grade Center. It is like you open a book's page after page and then paragraph after paragraph. It is like a virtual book…Ok. So we see them, but the projector is not showing anything… Deeply upset…
> Diana: Mmmm, I agree… Nice metaphor.
> Ben: Isn't that funny? It is exactly like a book…If you click here, you know exactly what you will see…– Ben laughs. His book metaphor probably comes from 'pages', a professional vocabulary in computer science. – Of course, if you know that much…
> Diana: Yeah, if you know that much…yeah…It makes sense. You need to know THAT much though in order for YOU to get there…to get to open the right page…otherwise…you would be lost, like I do sometimes. I can go there, but that doesn't mean I know what I am doing. It's like in a big city when you want to go to a theater building and you pass by but, because there are no signs and you never been there before, you just drive around with no luck unless you just find it accidentally.
> Ben: That's right. That's right. You need to know THAT much to get to open a book either…It is not a matter of curiosity itself. It is a matter of what you will get from THAT book…So, I guess, it is kind of similar still. – Ben keeps checking on something. The projector still shows no signal.
> Diana: Yeah, kind of…I mean, until you know that much you just go and click…kuturu…
> Ben:… Kuku?...Yeah, one can go kuku with this…-Laughs.
> Diana: Kuku?..Aa…No….no. I said kuturu…not kuku…Kuturu is an Albanian word. It means wandering…So until one learns, one can go…click…kuturu.
> Ben: Yeah…Yeah…Kuturu and even kuku sometimes… – Laughs. – Never heard of that word before but it makes sense… As an example, your laptop seems fine to me but still doesn't get engaged with the projector. I know what I am doing, yet... So, I am not going… kuruku… kukuru… –Ben laughs again.
> Diana: Kuturu…
> Ben: Yeah…But we can surely say that it is driving me kuku…I mean, literally kuku…Like only technology knows how to…
> Diana: Unfortunately, yes…So, I am thinking that I wouldn't be able to fix issues like that on my own.

> Ben: Probably not. It's like a car, or a house. Some stuff you know [how to fix it], mostly you don't.
> Diana: And if this happened in the classroom?
> Ben: Then you know where to call…
> Diana: Yeah…Abracadabra…

As Ben says, people should understand that this is *how technologies (don't) work*. Ben likes to play with words. He has a compassion for technology and languages. Born on a refugee camp, Ben has no official ethnicity. He is slightly more than six feet tall, has a brownish complexion, and speaks perfect English. "*You can't claim you are from Blackboard either, no?*" I ask him. He laughs, "*Apparently not. That place is not known from the UN yet. Sometimes it feels like you are from there, you know? Especially when people say bad stuff about Blackboard…It's like, no man…It is not that bad, you know?"* These comments ring true; often technologies seem to become part of our identities. Especially when technologies become challenging, knowing how to operate them it feels like conquering them; it builds a social status.

While Ben is working to find the broken connections, my eyes wander around his cubicle. One of many pictures in his cubicle shows his beautiful baby sleeping. Another one shows his wife. We keep working with no luck.

> Ben: "[The Internet] technology is getting so deep in our lives, that now we truly need to know more about computers than math itself. We will get there at one point. We are somehow becoming familiar [with this kind of technology], don't you think? There is some kind of logic into it. Once you get used to that logic, you kind of know where to go and check. It's like a book…or like a city. We call it Blackboard." – Ben gave up finally. – "Unsuccessfully done. It may need another kind of mind. At least we know now that the laptop works fine and the projector itself works fine too. That is an achievement for now."
> Diana: It doesn't help me with my class tomorrow. I got to give a presentation.
> Ben: Unless you want to update your equipment…and replace them…
> Diana: What?? I can't believe what you just said…Of course I am not going to. Thanks for the advice maestro.

Ben: Welcome. We are here to help you. – He smiles with his own jokes.

End User: What is it?

During my routine observations at the University I heard the IT Help Desk technicians addressing the callers and emailers as professors, faculty members, administrators, bosses, librarians, or students. In the related documentation created by University, these users were addressed as "patrons," which does not sound adequate. At the beginning of my study, it just made sense to me to hear those terms coming out from the mouths of the technicians or read it through their emails. I questioned the absence of the terms *user* and *end-user* – both popular in discourse surrounding technology – in the process of describing issues and concerns as they were transmitted from the learners to the technicians and from the technicians to the system. I was hoping that someone would tell me that the word *user* made no sense at all, that they would show me that *learner* was a better term. *User* and *learner* seemed like the same term until I realized that the power users did not view them as interchangeable. Power users, in general terms, described users as people with good knowledge and skills who usually do not contact Help Desk; users already have sufficient knowledge of how the system works.

It's Like Blank

At the C&IT Help Desk, Chris, one of the part time Blackboard technicians in charge of the customer service team that afternoon, was writing an email. He had just received a phone call from a professor, who reported difficulties in playing a movie in

Blackboard. After checking Blackboard from the professor's account and finding himself unable to help, Chris addressed the issue in an email he sent to Bbadmin, the Tier 2 account. From the corner of my eye, I noticed the word "patron" among lines and repeated the term loudly, "….patron?" Chris probably didn't understand whether that was a question or an invitation for him to continue, because he just said, "*Yeah…I have to address the issue to Bbadmin so they can further investigate it. So I fill out an incident form.*"

> Diana: The ticket?
> Chris: Yeah…
> Diana: So instead of saying user…- He just looked at me. - How would you define user? - I asked quickly.
> Chris: Well, user is like blank…Everybody can be a user. I don't know. It doesn't mean much [sense] to me.
> Diana: At what point would you consider someone being a Blackboard user?
> Chris: Good question. Potentially, everybody at University can be a user once you have an ID and passcode. It's like obvious. Yet you are not… You need to register for a class so you can get on Blackboard, do stuff. And yet, you need your professor to make the course link available to you. Never thought before about it…People who call here are people who are at the very beginning of that process though…when they start of being a user…a kind of…– Chris seemed surprised rather than confused. I felt as he was thinking: "Really? Are you wasting my time now?"
> Diana: …What do you mean?
> Chris: You probably realized that we receive plenty of phone calls from students, sometimes even [from] professors, but students the most, who want to reset passcodes…- He smiled- Good sign that they never been a user…But then, user of what? Blackboard? Banner? Stars? Technology user? Perhaps this is why we don't say 'user' that often. We like to be specific.
> Diana: Is patron more specific… kind of?
> Chris: *It's just another of those…blank words. No one would know why [we use it]. You see?* – He pointed a template pinned on the cubicle wall. I realized then that they just copied the template. There were quite a few templates shown there. Perhaps one for each of the possible situations.
>
> Diana: How would you describe the issues with technology here?
> Chris: There are many types of issues…can't even remember all of them. If you asked me, many of them are not even real issues. It's like lack of

> knowledge…skills… You name it! You understand the nature of "the issue" right way when one calls here but doesn't know how to describe it… Most of what you hear is something like, "It's not working"…Then you just access their account and see it for yourself.
> Diana: So, basically, you think that things [within Blackboard] work?
> Chris: Basically things work, it's just the user…if we would call that…So they say, "This stopped working" or they say, "Blackboard doesn't even work…" You barely hear people describing the issue clearly. So we ask them to allow us to see what they see by using their access ID. Even when we tell them like, "Oh, I see what the problem is. You made the course available only until today so this is why your course disappeared… I am going to put course availability by default so everything should be fine." mostly, they are not happy. Instead of saying like, "Well, explain me more about it.", there are two things, they would probably say. They would say, "I never did that. I don't even know what that is…" Well, no one else did it for you, duh! They just clicked there randomly perhaps… I don't know. It just shows to me that the caller is not a user or at least not a good user. Or, they would ask, "Did you fix it?" or "Is it fine now?" This type of conversations, basically, is clues that someone is not a user, you know what I mean? User means you know how to do it, or you learn how to do it…basically you find a way to do it. So…
> Diana: Then user is a status? – Chris nodes his head for yes. –Where did you learn how to use Blackboard?
> Chris: Probably here. I don't remember it exactly. But I have been involved with technology since early in life…When I started playing video games perhaps…? I'm not sure. There is logic there. Right? And it needs curiosity…A person should be curious and should be eager to learn. Then things are easy for all of us, I guess.

Like Lilly and Jacob, Chris also is still a student at the University. In a few days, he will travel to Germany for an internship. Right after he told me of his travel plans, I noticed his blond hair, blue eyes, and fairly light skin. I wanted to ask if he was of a German background, but I kept quiet instead. As an anthropologist, you gain a sixth sense that tells you when to stop a certain line of questioning. My sixth sense seemed to betray me that time, since Chris, without even looking at me, added, "*I know what you are thinking…Yeah…I remember when I went to visit the Holocaust Museum in third grade and all the Nazis there looked like my cousins…Just didn't know where to hide myself…*– He laughed. – *It gave me such a hard time in front of other people. No one said*

anything…It was just me thinking…Isn't that funny? But [in Germany] I am probably going to be [seen as] just one of the millions of Americans…"

> Diana: …Would you consider introducing yourself by saying something like "I work for Blackboard"? – Laughs.
> Chris: I'd rather not. [I] [d]on't think Blackboard means anything to many people. I usually say I work for University. That's all.

Many of people at the University do not necessarily identify themselves with Blackboard, even though they may work with the technology as an essential component of their job. During my observations, I have seen many objects with the University logos and colors, yet I have barely found any signs relating to Blackboard. Surprisingly, not only was there a lack of information about Blackboard readily apparent, but also many people within the University showed no interest when I shared any Blackboard-related news. With the exception of the S.A, with whom I shared plenty of information and comments, the rest of the employees seemed to just respectfully listen until my own enthusiasm of sharing Blackboard news started to fade.

O My God…Can't They Just Google it?

This conversation happened when the Help Desk crew was still located within the Student Center. It was a Saturday in early December; the outside was cold, but the sky was clear and blue. Ann, one of the Help Desk technicians during that time, sent one of the girls who worked during that shift to open the door downstairs for me. This act created a shortcut, a secretive way to get upstairs without walking for minutes through the Student Center. We took the elevator to the Help Desk.

The Help Desk of the University occupies a large area. The ceiling is made of some cheap, small tiles; two or three of them were missing. An old carpet, the corners of which were full of dust, covers the floor. There are three or four computer screens close to one wall and that many phones next to the computers. Ann was helping someone to set up her University account on an iPhone. Ann was wearing black jeans and a dark grey top. Her face looked sweet. Her hair somehow managed to stay on the top of her head, but I could not see what kept it there. She was sitting on her foot and kept swinging her chair comfortably. After she finished helping the student with her phone, Ann was able to talk to me about her position.

> Ann: Ninety percent of the phone calls here are just students who want to set up their accounts. We help them do so in like 2-3 minutes. Easy.
> Diana: What about the rest?
> Ann: Any types of problems. Most of the people who call here are like my parents… [My parents] do wrong stuff and they call me saying, "This is not working…" I mean, always. So, it's like you freak out. OMG, what did they do? I am a kind of a technology-girl, you know? They call me on everything.- Ann laughed.- They don't explain…They just complain. Come one people! It is you. The thing works. –Ann has a beautiful smile.

While we talk, Ann takes another phone call. She types a long sentence on Google and clicks *Enter*. She clicks on one of the links and reads quickly to herself. Then, "Aha!" She stops moving her chair and states, "*Ok…so here is something that can help you there*." She reads it from the screen. I could not hear what the person on the other side said, but it seemed as if they understood each other. Finally, she said, "*You are welcome. It was a pleasure*."

> Diana: That was quick.
> Ann: I know. It was not difficult. I can't believe it. They know that much…they are university professors, so of course they know a lot…However, when it comes to Blackboard, they call us…Common! I would probably fail his class, right? But

he calls me. I google everything. It is there. I'm like, "You can google it too!" correct?
Diana: You are probably right. I call here too. I think of you guys as experts…You understand the nature of the problem, I don't. I mean, sometimes I do, but then I don't call here. And we are sometimes frustrated…I know I am sometimes…even though I am never mad at you.
Ann: True. So many people are already frustrated when they call here. And you better be careful and quick with them, because [if not] then you are in trouble…big time! I know I am in trouble a lot. I guess I don't sound very friendly on the phone…
Diana: Nooo… That's not true.
Ann: Yeah…I know I have been in trouble many times. Well…I am getting better, I guess. – She laughs.
Diana: The callers…I mean people who call here, are they Blackboard users you believe?
Ann: Well, technically…They may be kind of users…You know? It depends.
Diana: Are you a Blackboard user?
Ann: You can say that. Not that I know everything, but I know quite a big of a deal about Blackboard. I just like it when there is a challenge there for me. It makes me feel good about myself when I solve it. – She lowers her voice. – I wish I had that feeling when taking a class… Hey, tell me about Anthropology…
I told Ann what we do in the Anthropology courses that I teach.

She told me about her family and their new life after they came in the US. While she speaks, her eyes are focused on the screen. "Let me kill a few emails now…" she said. I said, "OK," and focused on my notebook. When I go for observations, I sit taking notes until someone has the time to have a conversation. Sometimes if an employee does not seem to be busy, I would go around and start the conversation.

You Just Know it

I am sitting with Cornelia in her office, a place with plenty of flowers and pictures. She is wearing a nice, light brown jacket that makes her smiling warmer. She drinks a lot of water. After we finished our initial semi-structured interview (perhaps a

few months before this conversation), our conversations about Blackboard technology remain mostly spontaneous.

> Diana: So, when people call or email about something, do you consider it as an issue or as a complaint?
> Cornelia: Usually they call or email because they need help…It's an issue.
> Diana: Are there complaints?
> Cornelia: Sure…There are complaints. Yeah. You bet…
> Diana: So, how would you know when there is a complaint? Are people specific?
> Cornelia: No, but you know it right way…- She laughs. - Trust me, you know it. If they call, you would hear it. If they email, you can see that your supervisor is copied there…Sometimes people feel that if there were any issues, it is because we here don't do our jobs. It may sound funny, but it is true.
> Diana: So any issues we experience with Blackboard, basically, has nothing to do with you guys in here?
> Cornelia: Things work…They are made to work. We are here to help people who may experience issues…
> Diana: What about bugs?
> Cornelia: Yeah, there are bugs. We can identify them. Usually it is Blackboard people who solve [the issues with] them. I am happy when we catch a bug not because I like bugs but because then we know what the issue was, so we can address it.
> Diana: What do you mean by "we can address it", what do you do?
> Cornelia: I can have the guys (as she calls her team members) describe the issue, add the solution and post it on the Q&A system. Sometimes they would make a video…the cool videos you see there?
> Diana: Do they work? I mean, how people find out if an issue has been already addressed and it shows somewhere.
> Cornelia: I am not sure how many people visit the Q&A site before they call in regard to a specific issue. It is still helpful though, because we know about it. The guys know when something like this has been created so they are quick with solutions.

At that moment, I started thinking of all the connections involved in this process. The network of people, computers, programs, rules, skills, knowledge, and lack of skills and knowledge started to take shape in my mind. I started understanding that these connections existed under a shared goal and commitment. By following this train of thought, I may have forgotten to keep up with our conversation. Cornelia looked at me.

Cornelia: *What?*
Diana: It seems that things are quite organized around here. Most of the people have no idea how things work with the LMS technologies - I always tried to avoid my comments. That time I couldn't help, but be honest. – It is a lot of work…
Cornelia:..team work!...Yes…I am proud of my team.

The Blackboard system administrator, a young woman that describes herself as a "technology cheerleader" also talks how tense things become sometimes.

S.A: You can get a heart attack, when you get a phone call in the middle of the night when you are literally in the deepest sleep and the voice on the other side - your boss usually- tells you that things must be fine in the morning…You are like, huh? You don't even say that…It's just in your mind…Instead, you say, "Sure…" And you better believe it when you say it. This is how it is."
Diana: Otherwise?
S.A: Trouble…
Diana: But as I understand, mostly, issues have nothing to do with you guys.
S.A: Kind of true. There are issues and issues though. Some of them can be described as system dysfunctions. We are here to keep the system working. I wish people were more understandable, but we can fix it, unless it is not fixable.
Diana: They don't?
S.A: Well, it depends. Sometimes they do, sometimes they don't. When they don't, it is not that they don't want to. There is much more involved. Technology issues can affect people's work, evaluation, life…You are giving a test to fifty students when there is an Internet disconnection in the classroom…It takes just one minute for that to ruin the test..and many other things. The students would freak out. For them, it is their professor's fault. The professor would freak out. For him or her, it is our fault. Or Blackboard's fault. There are professors who understand the situation and don't make a big of a deal. Many of them don't. It is not their job to know, nor are they responsible to make it work. So…Things end up on us..
Diana: And your boss?
S.A: Multiple supervisors…Yeah, they do understand. Yet, the way things work or don't, they can get affected too. Sometimes people complain to the [University] president's office, you know? Nothing good comes out those stories. So, basically, they want things done and done quickly. That's the bottom line of our working philosophy here. Things happen? OK, fine. Fix them. You can't? Help the user understand the situation so they don't lose interest. It's a matter of trust and reputation between the school and the people here. We get paid to keep things working…and I guess that should apply to people too.
Diana: Who calls here mostly? Would you say just users?

S.A: I am not sure. Since I am not here, I wouldn't know. People who call here are mostly professors that have issues. You know? You can be a good professor but you still can experience technology issues. Two different worlds…
Diana: How much should one know in order to be good with Blackboard?
S.A: It is not difficult. Once people get it, they understand the situation. Troubleshooting… Usually the professors are not very good with that. Some of them are, mostly… don't. They may teach English, Criminal Justice… you know? Little they know about technology, unless they are from that field.
Diana: Do you get upset a lot because of this?
S.A: Not really. Things are as they are. [They are] quite complicated as a matter of fact. I just wish they knew better, you know? But absolutely, I don't want their reputation to suffer. Then, do you want to ruin mine?

Chloe also describes her job in similar terms; many of power users are constantly in contact with their work even after they leave the University. They take email and voice messages through their personal cell phone. "*Yes, I do respond to emails from home, especially if they are important…*" Chloe said. When I asked her how she sorts all of these messages, she said that after so many years in the job, her mind is self-trained to prioritize. "*You can feel when there is a problem there…A problem with people, not just technology… They are nervous…They are disappointed…They may be in trouble too…I mean, people work here. They have their lives affected…The students don't think that much what the issues are…They just say, "Her class sucks…", and who wants that? So, we feel it is not fair to allow technology to interfere…That is why we try the best to be helpful…We even accept the blame…*- Chloe corrects herself. – *I guess we accept to be blamed in front of the students. It would be different in front of our supervisors…*– She smiles. – *That would be… a lot! Good thing is they know how things work…*"

Crucial User

On different occasions, I heard or read that faculty members were considered *important users*, *super users*, or *crucial users.* In online chats, they are addressed as *ignorant*, *lazy*, or *expensive labor*. From these observations and from other related conversations during my fieldwork, it became clear that those descriptions have much to do with how individuals are positioned within the structures of educational technology. Those who feel that they know "the tricks" of technology, but who know nothing about teaching, feel that technology is "easy" and teachers "must master it." Those thoughts appear as different from the neoliberal ideas and practices that see teachers as "expensive labor" and that want to replace these with technology. Students and the members of the IT community know, however, both the important role of *the users* who teach and their impact on the learning technology developments. Although a software may state-of-the-art, it will be useless and unpleasant for learners if a professor does not have the skills to make it work. As Dr. G., a University professor and winner of the 2012 Blackboard Catalyst Awards for Exemplary Course said, "*I do the teaching, Blackboard doesn't.*"

A Strategic Connector

Crucial users can become strategic connectors when negotiating technology within an institution; professors are naturally seen as the first source of the LMS information and troubleshooting by online students. Faculty members are the real users (for lack of a better word) since they legally hold the power of teaching and of designing that teaching. Even though the power of choosing and implementing an LMS may have

been left in the hands of the so-called technology experts, their expertise will be as good as accepted by the crucial users. As demonstrated in the two articles shown on Chapter III, the implications of using an LMS are political and not without professional consequences. There, Chubb and Moe state that "…[C]*olleges and universities, whatever their status, do not need to put a professor in every classroom. One Nobel laureate can literally teach a million students, and for a very reasonable tuition price."* In contrast to this utopian vision of eLearning technology, an individual who has taken at least one online class knows there are essential differences between virtual and actual education. It is clear that an LMS can provide for new spaces of communication and learning, yet the learning that takes place cannot be defined by technology.

During my fieldwork, I came across of some interesting data from a Blackboard Student Support Survey organized by the Learning Management System Support in winter 2011. From a sample size of 232 University students who took the survey, two-thirds have not needed any specific help using Blackboard. When they had a question about the software, 80% of the responders claimed that they were able to find the answers. Responding to a question that stated "List the help sources by starting from the most helpful," students listed course instructors as the number one source, followed by other students as the second source, and then Help Desk as the last source on the list. Although the results of the survey do not indicate why instructors made it at the top of the list, my speculation implicates culture as the main factor. Professors are seen as the class authority; in this role, they are assumed to know what is going on in class, including the dynamics of technology. Although distance matters less through Internet connections, a

teacher or a friend are assumedly seen as the closest sources of information for students; their cluster of relationships does not necessarily involve the Help Desk. Finally, the culture surrounding higher education presents online classes and their technology as the responsibility of faculty members.

Participants in the survey suggested that live chat and a help hotline may be helpful for the students who experience technology issues. Some of the responses also suggested that in-person and hands-on sessions would be helpful for learning the technology. Other suggestions were quite simple: make the help icon bigger on Blackboard and find ways to direct students to these resources within the technology. By another speculation, student suggestions on effective teacher-student communication in regard to technological issues is perceived as a direct outcome of the survey design. It has become routine to consider a teacher-student communication during technology incidents, a cultural assumption that demonstrates the perspective that faculty members remain as the main source of information in the classroom, even in regard to technology – all in contrast to the neoliberal project of industrializing education by undermining the popular vision of teacher-as-leader to strengthen the role technology.

Writing emails and filling complaints takes a considerable time of people who work at Help Desk. In both cases, their fingers move quickly on the board and they write and write and then click; write and write and then click again. Many times during my observations, I came to think on the nature of the Internet and software technology. There are people who have a passion for doing cool stuff, as Kris, my son would say. I can imagine them struggling to find solutions as well as enjoying the work. However, that

enjoyment would be never complete if there are not people who would accept the product that makes them excited and get involved in using them. There is no doubt that the Internet technologies have proven beneficial to society. I am sure no one has missed that, especially in the U.S., where more and more people conduct personal business online. However, not all people have been able to recognize the fact that users are the other strong half of the technology success; either when they call because they "don't know", because they are "frustrated" and "want to yell" to somebody, or because they "want somebody do something" for them. In each case they are the ones who trigger the system, shake it, and help to change into a socially liked direction, supposedly. Then, there are the system connectors – people like Ann, Chris, Ben, and Chloe – who, through their knowledge, skills, and work allow the information to be circulated, software to be improved, and people to be continuously connected.

> Diana: What do you mean by "writing a ticket"? It sounds like a police job…
> Ann: I know… – She laughs. – It's an email. When something doesn't work… – She laughs. –I just said, "Something does not work…" Funny. But yeah…Something is not working properly with Respondus right now. Hold on a minute. I am sorry.
> She read the received email on the screen, took a picture of it, typed something fast (I could read the word "patron" again), added the picture and …sent!
> Later on I asked her how that works. She explains to me that as a Help Desk technician her job is to take phone calls, listen to callers and help them solve issues. However, there are certain issues that she may not be able to help. In a case like that, she *issues* a ticket. A ticket is usually a small report that describes an issue, recognizes the user, the time of issue, the name of the technician who received the phone call or email and a short description on what the technician did. This is always quick.
> Diana: Then?
> Ann: They [Blackboard analysts] receive it and take care of it.
> Diana: How long it takes to solve an issue usually?
> Ann: We say 48 hours. It's much quicker. If they know how to fix it, it's like in a few hours.
> Diana: So there are things that don't work…

Ann: There are glitches or bugs…yeah. They can be fixed.
Diana: If they don't?
Ann:…not sure. I believe they address it to the Bb administrator.

Later on I did ask Chloe, Ben, and Cornelia in separated conversations. They did confirm that a ticket is a written form in recognition of a technology issue experienced by an individual or group of individuals when operating Blackboard. It is a written document that usually circulates by email. As a rule, there are no tickets created if the issues are solved during the time that a phone call or email is received. If not, the ticket is moved to the Bbadmin (which identifies the Blackboard team email). Any of the Blackboard team members who happens to check the Bbadmin email and read the email, should check the issue and follow up with it until solved. Usually an issue gets solved by the next day or so. If that happens, the original user is notified by email quickly. If a solution seems not to be found even after two or more Blackboard team members talk and try, the ticket is delivered to the Blackboard administrator. The Blackboard administrator is not in charge of solving issues on her own, even though she always tries. If a ticket makes it on her computer screen, her job is to notify the Blackboard providers and waits an answer from them.

I started thinking on what affects individual perceptions in general and the technology ones specifically: Education? Ethnicity? Personality? Knowledge? Experience? It is a well-known fact that technology works the way it does, what affects the differences in perceptions? Even though this would be a good idea for a future study, the data suggest that there is a correlation between how people find themselves situated

within a technology and how they understand it, or feel about it. The following conversation with Ben is just the tip of that iceberg.

Blackboard Exemplary Course

Through the lens of the user network and through my conversations with power users, I analyzed the evaluation rubrics for the Blackboard Exemplary Course, the winner of the so-called Blackboard Catalyst Award, which attempts to recognize instructors and course designers (from licensed users) whose courses demonstrate best practices.[86] The program considers the following categories: Design, Interaction and Collaboration, Assessment, and Learner Support. Each category is evaluated by a set of subcategories.

Course Design is evaluated in the following four subcategories: Goals and Objectives, Content Presentation, Learner Engagement, and Technology Use. Among all four of these subcategories, only one – Technology Use – is clearly related to the LMS technology; the rest are of a pedagogical content (clear goals and objectives, clear and relevant presentation of course materials, higher order thinking, individualized processes). Even the subcategory defined as Technology Use is evaluated according to the following "best practices": a wide variety of delivery media are incorporated into the course; an effort has been made to use low-cost or no-cost materials; tools available within the LMS are used to facilitate learning; LMS tools are used to reduce the labor-intensity of learning (e.g. providing links to needed resources where they will be used in the course, integrating publisher resources, and providing streamlined access to

[86] www.Blackboard.edu/exemplary Retrieved on 01/12/2014

supplementary materials); and technologies are used creatively in ways that transcend traditional-centered instructions.

Learner support: Orientation to Course and LMS, Supportive Software, Instructor Role and Information Course/Institutional Policies and Support, Technical Accessibility issues, Accommodations for disabilities, Feedback. Figure 4-9 shows that the four rubrics can be grouped in the following conditions: Pedagogical, technological, and ambiguous, for the ones that can't be clearly defined. As the graph shows, the pedagogical component is significantly present to all four rubrics, while the technological component shows significantly present in one of the rubric elements (learner support), almost significantly present in course design, but almost insignificant in the rest of the rubric elements.

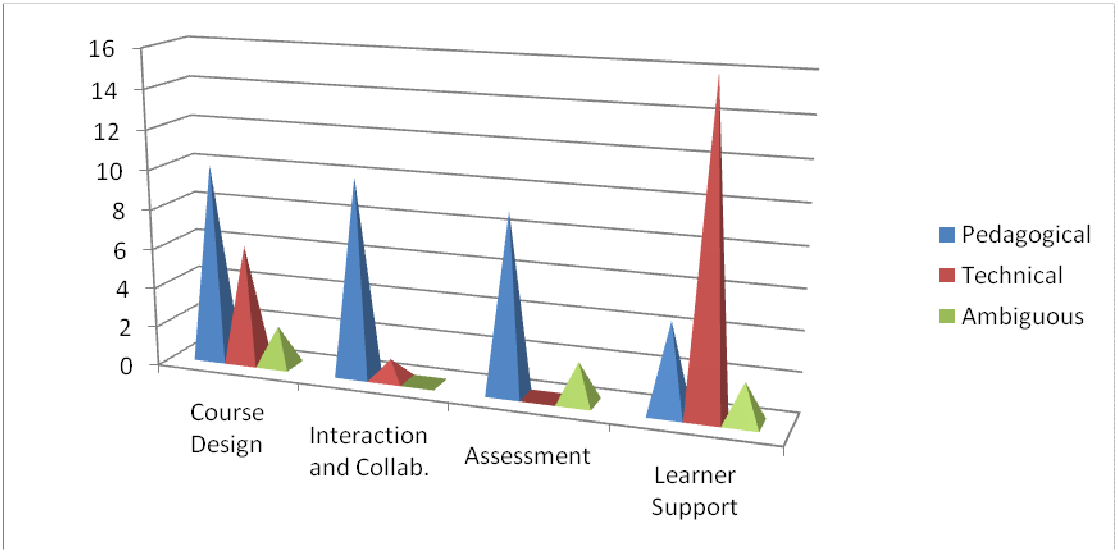


Figure 4-9: The chart based on the Blackboard Exemplary Course rubric

Dr. G.'s Fears

I met with Dr. G. in an arranged 45-minute interview. Her enthusiastic and friendly voice made the time fly by quickly. I knew her from an earlier presentation, during which she demonstrated why her online course had won the Blackboard Catalyst Award, evaluating the course according to the rubric used in the competition. During my fieldwork she and the Blackboard team, who worked together, were located in the Faculty Resources area inside of the University's graduate library. Because the new office was only a temporary office, its space did not have many decorations, making Dr.G.'s voice even more acoustic. I wanted to know her perspective on Blackboard courses and teaching. Her opinion was especially important since Dr. G., as a Blackboard Catalyst winner, was given the role of consultant on Blackboard courses by the University.

> Diana: How would you describe your Blackboard experiences so far?
> Dr.G.: I do like Blackboard. Its' convenient; it keeps me busy doing stuff for my classes. It's kind of a challenge and a discovery sometimes. It is good.
> Diana: Where did you learn how to operate Blackboard?
> Dr. G.: I learned about Blackboard for the first time in 1998 during a pilot study and fell in love right way. Back then, I thought it was an interesting turn in learning and I feel still the same.
> Diana: How would you describe your experiences with online classes? What would you consider a good online class?
> Dr.G.: Online classes are a way of teaching/learning. They must be very structured and organized. Students want to see consistence. Professors need to be creative [on how to use technology]. You will use Safe assignment, OK, but what for? You will use Discussion Board, OK, but what for? You see? They are there but it is you who can make a good use of it or put yourself in trouble. – She smiles. – It is easy to get trouble if you don't know what you are doing. Always think in terms of teaching, not in terms of technology. Technology is dead. It does not keep you connected. It does not teach you. It does not! The students want to see you, to feel that you are there. A good teacher should keep in touch with her students by comments, emails, fairness, humor…all the stuff that keep us connected in real life.
> Diana: Based on your opinion, how would you describe the purpose and function of Blackboard in higher education.

Dr. G.: It is a tool… Dr. G's helper. Sometimes a troublemaker…Can Blackboard teaches? Nooo!
…
Diana: Describe two things that you love/hate about Blackboard.
Dr.G.:I don't think there is anything in particular that I love about Blackboard. I just try to maximize its features. It's a lot of work. Not that I hate it, but it is unpredictable, you know?
Diana: In what sense?
Dr.G.: It can crash…It can cause conflicts…It can disrupt a test…your class. There is no guarantee… I know what they say, but I also know what happens…you know?
Diana: Tell me anything else you would like me to know about Blackboard.
Dr. G.: Blackboard is a vendor. It is there now. It can change. It can go…It can mess my life… –Laughs. – True though. I am afraid sometimes that I may lose all my stuff there, or I may lose all what I know…skills too… and start over again with a new platform. I mean, learning to operate Blackboard at the point I am right now, it has been quite a challenge. But I feel like I have it in my hands now and I don't want to lose it, period.
Diana: I attended one of your presentations when you talked about standards, what did you mean by that?
Dr. G.: It needs some kind of standardization so people [will] know what is what and where is what. [Blackboard] means a habit. There is a logic…it has a logic. Platform users should share that logic. Colors don't matter. How you design things online matters a lot. Their functionality can make your life easy or difficult.
Diana: How would you describe a good online class?
Dr.G.: A class that would keep the students engaged. It is hard to teach online but only a few people – usually the ones who teach online – would know that. I do enjoy teaching online. There are online teaching strategies that a teacher should learn and master [to become successful].
Diana: What do you think about online education in general?
Dr. G.: In terms of how it is organized and perceived now, I would consider it very, very new. There is no good plethora of models yet. I am sure it will.
Diana: How would you consider professional developments when it comes to online classes?
Dr. G.: It's a good way to expand the idea of online classes. We teach but also we learn from each-other. We share what works and what doesn't. For example, when you teach you learn that options don't work with students so things should be mandatory. Well, it takes time to come into that conclusion. You may be thinking, "What is going on? Why is that happening to me?..." It is different when you share experiences. Then you know right way…Aha, this is what is going on. Now I know…The same with Blackboard. You share. That is how education works. For me, Blackboard should be no more than a tool that helps me to teach a class. I do the teaching. Blackboard is there to help, and another time to mess up my teaching…She laughs. – Blackboard does not do the learning, remember that.

Diana: So, would you consider Blackboard just a simple tool?
Dr. G.: A tool for me, yes. I don't consider it anything more than that…you know?

During my fieldwork, I occasionally participated in a variety of Blackboard training sessions. In these sessions, I was able to talk about issues surrounding Blackboard with a number of faculty members. Their challenges and experiences seem to depend on the length of time they have been using Blackboard for teaching and learning. However, they all seemed to have a common sense of enthusiasm for using technology to teach. However, outside those circles I have met faculty members who do not believe in online learning and do not feel any urge to consider online teaching. Dr. G.'s interview, however, remains of a special value for the study, because it illustrates that the concerns of the teaching staff had little to do with their abilities and knowledge about using technology and more to do with their social status and deskilling. It appears that concerns outlined in Jenkins's article are also shared with even highly skilled members of the University.

New User: Congratulations! Now You Are Part Of University…

In order to understand Blackboard users, one must analyze the processes during which learners become Blackboard users. Along with the social and cultural construction of virtual spaces, there is the social and cultural construction of a user. The social construction of virtual space occurs at many levels, but the construction of a user is mostly an institutional task made possible by a frequently-collective effort and through freely-shared ideas. The process of creating a user may feel spontaneous, and the learner usually feels in an individual relationship with the system of technology. When the

visuals, symbols, and hyperlinks that appear on a computer screen can be described as "obvious" (learners can register, pay tuition, upload a document, check grades, and complete other online classes without any deep knowledge or skills), the well-organized work that works to the transform a learner into a Blackboard user usually remains hidden.

The Meanings of Access ID

The first step in the institutional process of creating a Blackboard user is providing a learner with institutional access. What can be seen as a simple and ordinary task has a deeply symbolic (it involves meanings, assumptions, and feelings of the learners) and ritualistic nature.

> Email from the System Administrator (April 17, 2013): AccessIDs are all two letters and four numbers and they are generated sequentially. They started with *aa0000, aa0001, ..., aa9999* and then increased to *ab0000, ab0001*, etc.. When you get through az then you increment the first letter, so you get AccessIDs *ba0000-ba9999*. We are going to be skipping 'fu' because it can be interpreted as offensive and are looking for other two letter combinations that might create a fuss. We have had one parent recently request that her child's AccessID be changed because it contained the number combination '666'.
>
> AccessIDs are generated by our automated systems it's some process attached to Banner I believe. The AccessID allows users to log into [University] systems and acts as a user ID. This is why we provide all of our customers with the ability to generate their own custom "Email name" so that they can personalize a bit. We also automatically generate an e-mail alias in the format of *FirstName.LastName@wayne.edu*. If two people have the same First and Last names, the first person with that name gets the FirstName.LastName combination and everyone else has a number at the end. For example two people named John Smith would have *John.Smith@wayne.edu* and *John.Smith2@wayne.edu*.
>
> If I am doing my math properly, that means there are 6,760,000 possible AccessIDs. Each range we skip reduces this number by 10,000. Even if we skip 4-5 ranges, we still won't run out of IDs for quite some time.
>
> Everyone who has a record in Banner gets an AccessID, so former students as

> well as current students and applicants, faculty, retirees, staff, guests, and even dependents on employee health insurance gets assigned an AccessID.
>
> A student ID is a nine-digit number generated in Banner as the ID number for every student. Many processes rely on this number and not the AccessID. So, nomenclature is pretty important!...
>
> Access ID is an institutional permission for using the U-net under verifiable circumstances yet in a private manner. A double code – Access ID and Password – maintains both (system) security and (user) privacy. There is a set of procedures that regulate the process. First, only the University employees and students are eligible to have technology access eligible (a guest can get limited access only if there is a host who supports the guest). Receiving an individual ID and password is a routine yet marks the beginning of a known ritual. Along with a learner recognition, the ritual aims at an institution-learner bond and identity.

While a routine, in reality, being assigned an ID number and email address is as purposeful as symbolic. Those ritualistic acts assign learners becoming another part of user network. Symbolically, they want learners to commit on those technologies and keep the networking of users alive.

The Ritual of Student Orientation

The University organizes several student orientations during the year in order to welcome the newly-admitted students. I attended two of those orientation sessions. Each of the gatherings consisted of a few hundred students, parents, and University employees. Both of the sessions I attended were held on Saturdays, one in April and the other in October. University volunteers in uniforms helped the participants get around the campus. Many information stations and directional signs placed around the main campus and near the surrounding streets. I did not attend any of the tours, but went to two informal sessions in the General Lecture Building during my April orientation.

The informational session seemed almost like a party for the many 17- or 18-year-old students, who, unless in a tour, just walked around in groups of two and three. Many of the newly-admitted students were accompanied by one or both parents. A few had brought their entire family, so some younger were a part of the overall crowd. I took a few notes when the stage was offered to S., one of the representatives from the C&IT Help Desk. He took the microphone and started his speech by making some cheerful comments that I could not hear. However, the auditorium (with a capacity for 250 but only half full for that session) burst into laughter. In a few seconds, the participants became quiet, and some of them even started taking notes.

> S: …Bye high school days, I am a college student now. Freedom! Right? I know how you all feel and that is right. You will be coming here in a couple of months and this is a great opportunity to meet with each other but also to understand how college works. Did you all get your IDs and passcodes? – Many students answered by saying "Yeees!"– Good start. If not, you should get it today. It is the first step, after you get admitted, that makes you feel as a student...connected with the school and other students around you. Here, we take good care of you. In your folder, you will find a green piece of paper with all the numbers for the C&IT department. Don't throw it away; those numbers are important for you. You have a problem with your computer? You call the number here (he read the number)…A problem with your passcode? Call the number showing here (he read the number). Blackboard issues? Are you guys familiar with Blackboard? Yeah, not that blackboard… the one we all hated… when you write with chalk…right? No one does that now, correct. Blackboard is the technology that helps you stay connected with your peers and professors 24/7. After leaving from here, I am going to meet with some of my classmates, because I take classes too. However, I am going home. I will meet with them by staying in my own kitchen! Because of Blackboard, literally you can take a class in your pajamas, isn't that cool? It is no longer high school when your mom made sure you left the house early in the morning, otherwise… – A student said something and a large group around him laughed. S. heard him, I couldn't. – That is right. Now you are the master of your fate…Now, two very important things: One, you never ever, ever, share your password… Otherwise, you can be in a big trouble. Two, never ever download stuff that you are not supposed to. I am sorry, they will get you and no one can help…It's illegal. Keep that in mind: It is illegal.

S. talked for about 15 minutes. He emphasized how important technology is for a college student, a line that may be expected from the IT department. However, as I thought later that day, the books are extremely important for a student's success, but no one talked about them during the orientation. The University did not offer any orientation sessions to share strategies on how and where to get texts for cheaper prices. It seemed that the purpose of S.'s presentation was to make sure that everybody received the ID and had the password setup. After his first announcement about these IDs, he took out his cellphone and explained that the University also has some *cool* mobile applications that a student can download for a little money. I realized that some students were already checking their cell phones. At the end of his presentation, he reminded the attendees one more time about student IDs and passwords. He emphasized the importance of this institutional access: "*You need to activate them. Do not leave this building before you get it done...*"

Right after S. left the stage, one of the police officers went on stage and a student volunteer adjusted the microphone for him. I left before the other presentation started. There were tables and stands with materials everywhere in the hall. Many of the University employees stood there or sat in front of their computers ready for help.

School rituals like this one, regardless of how they are organized, play an important role in shaping newcomers' perceptions. In the United States, where attending a college is usually a based on a student's choice, orientations are designed to grab the attention and interest of the students and families. These orientations are a tradition; institutions work to have prospective students and their parents leave the orientation with

the most positive impressions. The orientations for the prospective students are usually associated with campus tours as well. There are students, alumni, professors and even deans who show up occasionally in the tours, welcoming the newly accepted and cheering them up. These orientations are full of advice, but also focus on personal stories. Although the people who share their stories may forget their exact words, these stories tend to stick with the younger students, those who are just developing their expectations for life at the University. The words they hear during those sessions have an effect on how they consider as a new, college life.

The information presented through stories in the tours and through informal conversation is not simple information for the newly-accepted students. Instead, these stories shape students' perceptions and attitudes. Interestingly, those rituals and stories have recently begun to involve technologies as well. I don't think S. was at the orientation to "sell" Blackboard. If one were to accuse him of this, I am sure he would honestly deny it. He would have perhaps added that he hates Blackboard. By talking about technology in general, and Blackboard in particular, S. just did his job, a job he probably likes and wants to do it well.

Although S. may not have intentionally worked to turn these new learners into Blackboard users, his stories during the session work to orient the newly admitted students toward having a friendly relationship with the technology. I am sure he learned that the presentation should be "cool" or at least "not boring", so he did what he believes he is expected to do by making jokes and telling stories.

It should be added that these kinds of rituals and the language associated with them are present everywhere: orientations, registrations, teachings, trainings, testing, updating. These terms seem to dominate the institutional language of the University. They appear like an endless institutional endeavor for connecting learners with technology.

The Other User

Introduction

In general terms, the inclusive nature of software allows for the involvement of many people, who can share work and ideas with no geographical, cultural, and linguistic boundaries. This condition of recent technological developments has contributed to an expansion of secondary groups and imaginary communities. Instead of any nationalistic, ethnic, or religious affiliations, those communities, known for their worldwide dimensions, are quite often mistaken for what can be described as technological or just virtual communities. As the observations show, the collective work and shared interests of these communities hold them together and differentiate them from other online communities, described by Turkle (1997) and Rheingold (2000). When collecting data for the dissertation, I became a regular visitor of some of these virtual communities of developers through my involvement in discussions on websites such as Moddle.org, Chronicle.com, Splashdot.com.

From a narrow perspective, the online discussions on those virtual sites became of a special importance for this study because they provided tremendous information about

Blackboard technology and its dynamics. However, I also came to realize that the members of those communities shared common interests and knowledge that exceeded the common ground of the software. I observed how the members of those communities discussed the acquisition of Moodlerooms and Netspot (two open source supporters) by Blackboard and how they, altogether, made sense of that reality as they redefined their individual positions accordingly. Not only did these communities share information about Blackboard, they also and discussed the law regarding the Blackboard patent, for example, and the implications of the company's lawsuit against Desire2Learn LMS. These communities also organized themselves to take actions to affect the outcome of the case.[87] Their actions became sharply political when they decided to take side in the *Blackboard v. Desire2Learn* lawsuit by providing "tons of prior art" (used as a main source of information for this dissertation), publishing the information online, creating websites like boycotblackboard.com, and even offering money for the cause.

Reading the posts and comments in these online communities helped me to clarify how the capitalistic practices and mentality of Blackboard affected the image and reputation of the Blackboard product. It also became clear how those developments affected people's lives, attitudes, and actions. Generally speaking, those online discussions became a great source for understanding the real impact of technology, how people create and maintain technologies and how they develop relationships through those technologies. In situations embedded with coercion and dominance, people in these communities became involved and extended their personal connections by sharing

[87] See the History of Virtual Environments: Wikipedia.org

personal experiences and expertise, showing solidarity and acceptance, as well as simply maintaining personal relationships. It became obvious that virtual communities are just another form of human communities. The means and the clues of communication were different, but the results were largely the same. For example, people displayed their attitudes by inserting certain pictures and sketches in their postings , or by using symbolic screen names (Don Quiouxe, Mr. Splashypans), by differentiating the fonts to intentionally emphasize ideas or attitudes ("THAT's interesting"), and by inserting emoticon icons (☺). Some of the discussion forums were built to get additional feedback from users by allowing the posts to be categorized anonymously as *cool*, *very cool*, *not very cool*. I am sure that some of these relationships extended outside of the website through the use of email or phones, although my limited participation in these communities kept me from being involved in this way.

These communities forced me to consider a legitimate questions about my research categories: Should the people who know Blackboard bugs, have the skills to operate Blackboard, understand "the evil of software patents" and its political economy, yet do not operate Blackboard be considered Blackboard users? Do their separation from Blackboard, their disappointments, and their political actions against the technology classify this group as non-users? If they are to be considered as Blackboard users, should the term *user* be redefined?

These kinds of users seem to be categorically different from those in the University. In contrast to the criteria used to define users at the University, members of these online communities possess a high level of LMS skills and knowledge, are not

involuntarily exposed to the technology, are mostly not under the pressure of a specific institutional power, and associate with each other only through collective work and shared ideas. Unless we accept that a *user* is defined by a political position toward technology – not just a human being in physical touch with a technology – the concept of *user* remains open for debate. The term *other users* is used for this group similarly to the concept of *the others*, an anthropological term that uniquely expresses the inclusive-exclusive nature of human diversity. Through their own words, this part of the findings describes the virtual community of the other users as shape themselves in contrast to and through the technological, political, social, and cultural developments of Blackboard software.

Cool Kids

> Collin Matheson wrote[88]:…I sure hope the halcyon view becomes a reality, because like many members of the Moodle community, I not only have a professional history with Moodle, I also have a part of my personal identity wrapped into the Moodle story. To me Moodle is not just software, it is community that thinks deeply and cares about education. Blackboard can't buy that and may not be able to effectively participate in that community either.[89]
>
> Chris Murad: Like Colin, this is much more than software to me, this is close community and I am proud to have some part of it.
>
> Stuart Mealor, Managing Director of one specific Moodle Partner, and Moodle Certification Manager: I wouldn't sell our Moodle Partner company for any price, because our Moodle is much more about community, and doing something wonderful with open source software and education in the world. If money was the highest priority for HRDNZ we would be investing in property, or maybe new oil wells [smiling face].[90]

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[88] Blackboard acquires Moodlerooms and NetSpot (From 03/27/2012 to 05/12/2012) https://moodle.org/mod/forum/discuss.php?d=199248 Retrieved on 06/29/2012

[89] Colin Matheson's posting received 6 Very cool rating.

[90] The posting received 5 Coolest thing ever!

> Saner: Moodle has a large community of users, contributors and developers who will not tolerate attempts by any large company to influence or change the direction of the project in ways that are contrary to the original vision and mission of the Moodle project.

These excerpts, taken from a chat in the Moodle Lounge virtual community, show that for many, software has become more than just an artifact. People feel connected with these technologies in many ways. When people define themselves through software, they allow the collective work and freely-shared ideas of the technology to affect their production, social statuses, and relationships. As Matheson emphasized, *"I not only have a professional history with Moodle, I also have a part of my personal identity wrapped into the Moodle story."* Software, considered by some as a bunch of complicated codes, is also a story written by many, a story filled with emotions ranging from frustration to excitement.

Those who work with a specific technology remember all of its details and meanings as a writer in his own poem. In the case of open source software, the product is often the result of collaborative labor. Such software appears as a non-market product because its production is not meant necessarily to increase profit. "*To me,*" stated Matheson, "*Moodle is not just software, it is community that thinks deeply and cares about education."* Matheson, and many others, associate themselves with an image of software as working toward something other than the bottom line.

These *cool kids* have no issue in involving themselves in work for a software even if they do not receive pay or economic benefits for their work as long as they perceive themselves as working toward a beneficial goal. This group is pained when they come to

realize that the work they considered as enjoyable or as for a good cause is taken away and being sold. Corporations seem to be frequently benefitting from the collective work of these cool kids. The pain for these cool kids in the virtual communities comes from a certain culture clash: a set of values developed within the community is broken, or at least questioned, by the work of the corporate world.

Cool Kids Versus Cool Technology

Is open source software necessarily better than proprietary software? If so, what criteria would legitimate the answer? Theoretically, based on the Albanian saying that *shumë mendje janë më mirë se një mendje* (many minds work better than just one), it makes sense that the involvement of many people can create a better product. From my personal and teaching perspective, I have found no significant difference between Blackboard (proprietary) and Moodle (developed as open-source software) besides my familiarity working with Blackboard. Here is how Schneider similarly describes his own experiences.

> Daniel K. Schneider: I can't resist adding some fun to this debate. Found out about this debate by reading Slashdot. I both use BB and Moodle in a very similar way.
> Moodle (variant one). Create a class, add 9 assignments like this
> assignment 1
> assignment 2
> ….
> Each assignment only links to a grading rubric. No text, no forum, nothing else. My whole learning environment is a MediaWiki (course materials, students productions, forums plus two traditional webservers (special purpose files, student productions). In other words: I just use Moodle to create and publish grades……..Moodle variant 2 (because I am co-teaching the class)
> A technical support forum
> A few links to documents

A button that will open a LAMS sequence
BB. Way more sophisticated use since I work as an adjunct faculty in a teaching college and BB is a "standard" there. Add 8 links into the Wiki programXXX
Add 8 assignments for student production upload associated with a grading rubric
In other words, why would one use LMS for teaching as opposed to evaluating? Most good teachers I have heard of, create their own teaching environments with whatever tools are appropriate. These have to be widely different with respect to learning goals. Do you need Moodle for learning contents (word files or IMS CPs)? Why do you want to cope with creating and uploading files for each class when you just could make your own stuff available in an environment that you own? Are hooked on quizzing? Any LMS can do that. In other words, what is the difference between Moodle, BB or any of these LMS things?

To put it more bluntly: Moodle started off with soci-constructivism and other modern pedagogies in mind, got there half way and then stopped. I got a Moodle server since its beginning and except for hundreds of new control options I frankly can't figure out the difference between version 1 and 2.2 (except for the grading rubrics for which I am quite glad). So, why do you need Moodle as opposed to just any random LMS?
Sorry I couldn't resist… (ducking my head)[91]

Don Hinkelman: It's the community, Dan. A collaborative, open group of innovators who love education. Not only that, it's place where all the women are strong, and men are good looking and the kids are above average.

If you moved the community to a "random LMS", yes, I would follow. There are better wikis, better blogs, and better quizzes here and there. But there is no place with better beer, literally. I sit down in an izakaya (Japanese pub) regularly with a bunch of folks who talk about what new module or plugin they are creating. We do conferences and workshops together. I connect with teachers across the world who co-design courses with me. I work at a school where we have a question bank of 2000+ growing, improving questions to build fun quiz exercises from. We have a repository where we write textbooks and share them (on Moodle).
Finally, the music here is pretty good. Martin plays some mean rhythm."[92]

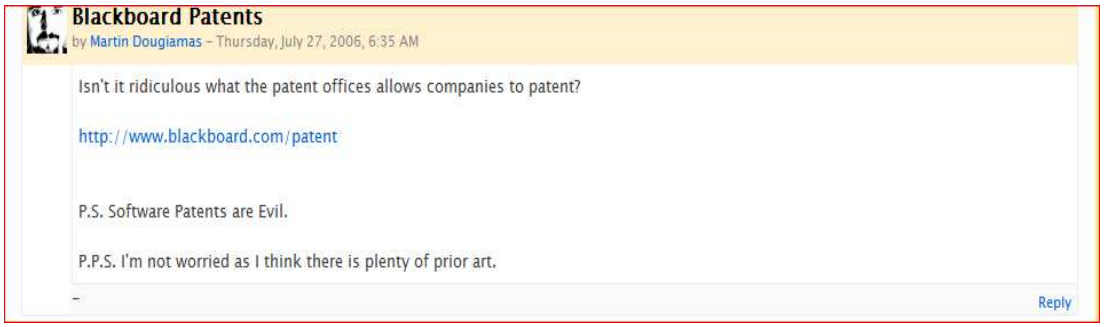
Daniel K. Schneider: Don, I take this community argument (smiling face). But if it exists as strongly as you seem to imply, then nobody should be afraid of Blackboard (smiling face)."

[91] The posting received 2 Not very cool
[92] The posting received 3 Very cool ratings.

The conversation seemed unusual, not just because online sites sometimes tend to habituate uniform thinking. This conversation makes it clear that the real concerns (regardless of how appear) go beyond technology; none of the technologies can be described as inherently good or evil. Generally speaking, groups are formed and developed based on some tacit agreements that define particular perceptions and interest; all less to do with just technology. What may seem as love for or hate against software, it is rooted in a social-political situation and how people relate to it.

Cool Kids And Evils

Capture IV-8 shows the posting of Martin Dougiamas – the owner of Moodle, an open source software registered in Australia and in use of many educational institutions all over the world – in Moddle Lounge on July 27, 2006. The short text in the body reads, "*Isn't ridiculous what the patent office allows* [*sic*] *companies to patent*?" and then "*P.S. Software Patents are Evil*." and "*P.P.S. I'm not worried as I think there is plenty of prior art.*"[93]



Capture 4-8: Software meanings

[93] www.Moodle.org/moodlelounge/Blackboardpatents Retrieved on 08/12/2012.

The situation appeared quite alarming for many on the forum; a large group of readers replied to his short posting quickly and kept the thread growing for quite a while. In less than three hours, Schwartz replied, "*More than evil; they don't make any intellectual sense*." Later on that day, Green stated that the biggest problem with patents is that the small players in the market find it harder to defend any "infringement" legally due to their budget issues. This situation creates "*a big discouragement for open source development when the budget for the legal department tends to be somewhat minimal*." Churchward, a little later, wrote, "*Moodle is the only 'real' threat they have at the moment. This whole thing shows exactly why patents have become almost ridiculous*." The situation is "*almost equivalent to Microsoft trying to patent the concept of browser*", added Crosslin.

In 2006, Blackboard announced that the US Patient Office has awarded it "a patent for technology used for internet-based education support system and methods." Well-known concepts and processes were covered in the patent, including client-server online courses with users defined as either students or instructors, the use of an online drop box in an instructional setting, the use of online grade books, and the use of online assignments. The patent became an issue in many developers' circles because many (if not all) of the patented features were being used in higher education way before June 30, 2000, the filing date of Blackboard's patent request.

The patent was seen as a sign of what could be considered "*the monopoly of the eLearning environment.*" Within Moodle circles, that patent was viewed as a threat

against open source LMS. These developers were especially frustrated by the fact that Blackboard patented what could have been described as "*prior art,*" demanding loyalties from those who used the common elements of the patent. On the same day that the patent was awarded, Blackboard filed a patent infringement suit against Desire2Learn, a successful eLearning software provider and Blackboard competitor. Here is a short recap by Paul Nijbakker posted in the Moodle Lounge on Aug.8, 2006:

> BlackBoard Inc. (the dominant provider of e-learning software in the online-education market, after they acquired two other education-technology companies, Prometheus and WebCT) was granted a very broad US patent in January 2006, covering pretty much all the aspects of a common virtual learning environment. They are trying to get the patent accepted world wide [*sic*]. If they get away with it, it means that BlackBoard [*sic*]will have the monopoly of the eLearning market.
>
> Nobody seemed to have noticed the patenting process, even during the 6 month period in which people or organizations (sic) can protest against the patent (naturally, BlackBoard kept it under wraps). However, as soon as the waiting period was over, BlackBoard announced that they now had the patent and would enforce it retroactively (I believe until 1997, the year the company was founded).
>
> The very same day BlackBoard filed a patent infringement suit against the Canadian eLearning provider Desire2Learn, which presently is BlackBoard's major competitor in North America. The suit was filed in a rural Texas court (one can assume that BlackBoard figures that it will be easier to get their way with a bunch of nationalist hayseeds on the jury, no offence intended).
>
> Reaction
>
> The outcome of this law suit will have an important impact on eLearning. It is therefore of interest to us all to follow the procedure and to take action against the monopolisation [sic] of eLearning by one US commercial giant.
> http://www.boycottblackboard.org/index.php
>
> The open source community is gathering evidence of prior art, so as to prove that BlackBoard did not invent most of the functionality they have now patented
> This litigation once again shows that software patents are not conducive to the development of fair and open standards in eLearning and European Moodlers should support the European Parliament in its opposition to such patents.

With regards,

Paul Nijbakker

The loci of the online discussion was quickly established: Blackboard announced a patent, the action was evaluated as threatening, yet, the participants were encouraged each other to not panic. A strong sense of community quickly arose. This sense of community became clear through the words that people chose for defining themselves ("*Surely, there got to be some places where we, as Moodle community can file complaints for this patent*"), but also through the collective actions they decided to take, especially after the news that "Blackboard filed a lawsuit against Desire2Learn".

"*I suspect that Blackboard is sueing [sic] Desire2Learn as an easy victim*", wrote Low on August 2, 2006. "*Do we think the open source Moodle is driving the cutting edge trends? Which suggest that the mega corp [sic] will need to catch up to rear end us. There is always the copyright counter attack.*"

"*My experience has been that the bad guys will come and bite you in the bum if you are not looking under every rock for them.*" responded Crosslin.

"*Interesting,*" wrote Miller, "*if they come after Moodle – who do they sue? Everybody using it? The developers of the individual bits they object to? Martin*?"

No one answered these questions. The initial postings, however, give the impression that members of this virtual community were both panicked and confused. The language of "we" and the definition of the "Moodle community" took a strong meaning. These characterizations reminded me of what Durkheim describes as human solidarity during crime occurrences in society. The online discussion felt as if the

community were preparing for a real war; community members talked about victims, Blackboard's strategies, and plans for attacking back. They reacted and organized quickly. "*Do something,*" wrote Nijbakker as he posted a link for Boycott Blackboard, which on 06/29/2012 showed only the logo of an once-existing organization.

People within the community were highly occupied with planning actions to "get things done." Moodlers in the Lounge asked for a more organized action. Capture IV-10 shows an anonymous posting that insisted on some more (radical) actions. The patent developments become a persistent topic of conversation, and more people became involved in this to discussion by bringing in information from other organizations, media, and institutions.

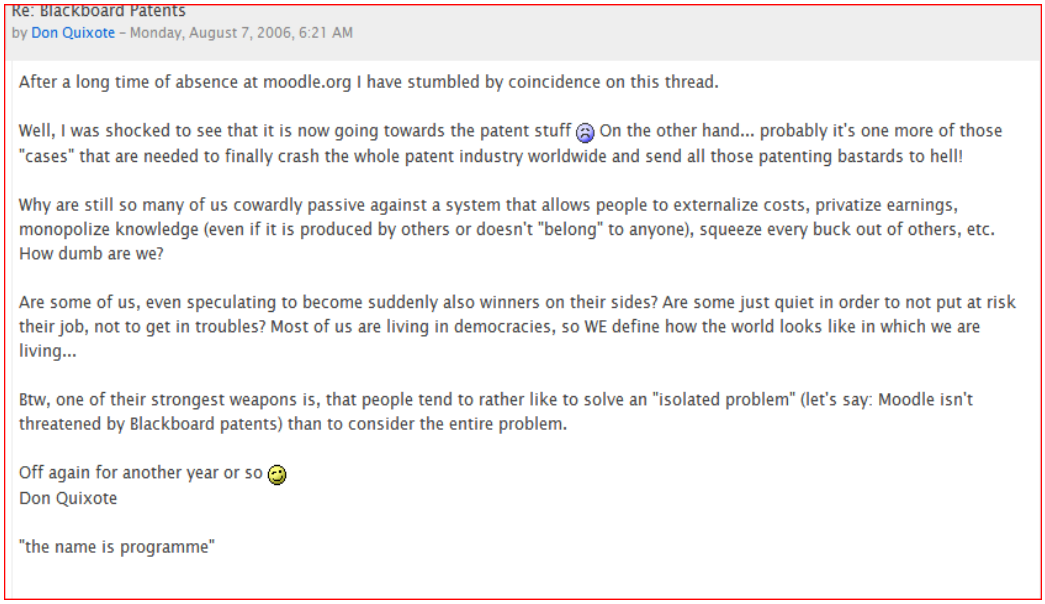
Here are some very interesting postings of that time:

> Blackboard Patents - UK IMS meeting between CETIS and Blackboard, send Qs by Aug 31st
> by Steve Wright[94] - Wednesday, August 16, 2006, 10:17 PM
> Received this by email - Sheila is collecting questions to be put to blackboard from those involved in HE/FE in the UK:
>
> To quote:
> As you are all no doubt aware there has been quite a bit of controversy surrounding the recent Blackboard patent announcement. At the next IMS meeting
> in September (being held at Blackboard offices) there is going to be a Q&A session between Blackboard representatives and IMS members. IMS are already collecting common issues from their members - but I suspect that at the moment they will be quite US focused. As CETIS represents the UK HE/FE in IMS, I would
> be happy to collate our common issues and feed them back to IMS for inclusion in this session (and of course in turn pass back responses). Apparently the session is going to be recorded but I'm not sure if the recording will be made

[94] Some of the postings shown are made copy-and-paste to preserve their interface; pictures and other visuals are included.

publicly available - or if someone will patent it first

……..



Re: Blackboard Patents
by Don Quixote – Monday, August 7, 2006, 6:21 AM

After a long time of absence at moodle.org I have stumbled by coincidence on this thread.

Well, I was shocked to see that it is now going towards the patent stuff On the other hand... probably it's one more of those "cases" that are needed to finally crash the whole patent industry worldwide and send all those patenting bastards to hell!

Why are still so many of us cowardly passive against a system that allows people to externalize costs, privatize earnings, monopolize knowledge (even if it is produced by others or doesn't "belong" to anyone), squeeze every buck out of others, etc. How dumb are we?

Are some of us, even speculating to become suddenly also winners on their sides? Are some just quiet in order to not put at risk their job, not to get in troubles? Most of us are living in democracies, so WE define how the world looks like in which we are living...

Btw, one of their strongest weapons is, that people tend to rather like to solve an "isolated problem" (let's say: Moodle isn't threatened by Blackboard patents) than to consider the entire problem.

Off again for another year or so
Don Quixote

"the name is programme"

Capture 4-9: The name is “programme”

by Tony Hursh - Friday, August 18, 2006, 5:29 AM Sakai Project Retention Center ….
http://www.sakaiproject.org/index.php?option=com_content&task=view&id=442&Itemid=312
In the wake of recent efforts to limit the free and open sharing of innovation for online learning, the Sakai Foundation has retained the Software Freedom Law Center[95] (SFLC), an organization directed by Eben Moglen and dedicated to providing advice and legal services to protect and advance free and open source software, to evaluate the recent Blackboard patent, its impact on the educational community, and to advise on legal matters regarding the patent. There's more on the site.

[95] The Software Freedom Law Center filed a request with the US Patent Office to re-examine the Blackboard patent, a request which was approved based on the so called “previous art”.

Re: Blackboard Patents
by Richard Treves - Friday, September 15, 2006, 5:37 PM
Thanks Jon,

INOL but the crux of the defence[96] [*sic*](or at least the defence [*sic*] that is not written in complete jargon) seems to be that BB did not inform the patent office of prior art and, if this is proved, it invalidates the patent.

"...18. Matthew Small, the General Counsel for Blackboard, stated to the Association of Learning Technology ("ALT") on August 23, 2006, either verbatim or in substance, that "Blackboard people, including Mathew Pittinsky and Michael Chasen worked as consultants to IMS during the late 1990s. This was before Blackboard LLC acquired CourseInfo and formed Blackboard, Inc. and became a vendor. The dates can easily be checked. CourseInfo 1.0 as a system, and Blackboard's acquisition of it, predates the patent application."...

...20. For example, the IMS Specification disclosed user profiles that allowed for a user to be assigned multiple predetermined user roles.
7...

...21. Page 19 of the IMS Specification states, in part, "An IMS Profile for a user may include both learner-specific and author specific information since an individual can be both a teacher in one context and a learner in another."
22. The IMS Specification further discloses that these user roles are used to allow various levels of access to and control of various course files.
23. Page 21 of the IMS Specification states, in part,
In the IMS, as in many groupware products today, users participate in a group in the context of a particular role. For example, in the Biology 101 group, Mary Clark may be playing the role of a student. In this respect, she will only have access to those items that are granted to students. In addition, students are an identifiable group of people, so the teacher can send an e-mail to all of the students without having to address them one-by-one. In the Biology Study Group contained in the Biology 101 group, Mary plays the role of Group Leader. As such, she is able to invite new users into the group, add resources to the group, and otherwise manage the group."

Interesting developments.

---

[96] British in original.

Rich

Re: Blackboard Patents
by Chris Collman - Tuesday, October 17, 2006, 6:14 AM
Wow,
Local daily newspaper(Caledonian Record VT, est 1837, circulation 10K) picked up something about the blackboard patents. Believe it or not, it was part of my eye doctor's reading test

Looks like it was syndicated. Good quarter page, did mention Moodle once. Followed by a quote attributed to BB CEO saying he was in favor of open source software and BB had an open source module etc. Reporter also mentioned the blogging going on and the very long Wikipedia page which had history going back to 1945 (a very good year that was).
Anyone interested I can scan it.

Chris

Re: Blackboard Patents
by Gareth Watkins - Tuesday, January 23, 2007, 7:06 PM
Hi All,
Are there any updates on this issue? There are all kinds of rumors and hearsay flying around my institution about the fate of Moodle.
I'd obviously hope that no news is good news!
Cheers,
G

Drop Patent

To understand the impact of the Blackboard patent and lawsuit, one should read the letter sent to Chasen, CEO of Blackboard Inc., from Brian L. Hawkins, the President of EDUCAUSE, on behalf of the EDUCAUSE Board of Directors. The origin of Blackboard is inherently tied to EDUCASUE because Blackboard as a business was initially a contractor of IMS (one of EDUCASUE initiatives) and Blackboard press

releases were careful to emphasize that Blackboard supported and complied with the EDUCAUSE standards.

October 9, 2006
Mr. Michael Chasen
Chief Executive Officer
Blackboard, Inc.
1899 L Street, 11th Floor
Washington, DC 20036

Dear Mr. Chasen,

I am writing you on behalf of the higher education IT community, the EDUCAUSE Board of Directors, and our executive team to express in writing what we have conveyed in prior conversations. Our community is deeply concerned by Blackboard's patent and its recent law suit claiming patent infringement against Desire2Learn. Our community feels these actions go beyond competition to challenging the core values and interests of higher education.

One of our concerns is that you may not fully appreciate the depth of the consternation this action has caused for key members of our community. Among those who have been most directly involved in the development and evolution of course management systems—customers whom Blackboard has relied upon for ideas and advice—these concerns are most pronounced. Their anger over the law suit is so intense that many are simply not communicating with Blackboard. We have seen this intensity of anger only a few times before. In those cases, the corporations involved were unaware of what was happening outside their official channels. Please do not underestimate this consternation which we believe will impact Blackboard in both the short- and the long-term.

We are sure you are aware of the many blog postings discussing the law suit. Web sites have been established to gather evidence of prior art to refute the patent claims. The expressions we hear range from the vilification of Blackboard, to stories about the cold reception Blackboard is receiving at presentations, to the embarrassment of your employees who are asked to explain this corporate action. Even those members of the community who counsel taking a wait-and-see approach are not necessarily less concerned, just more focused on what they might have to lose by speaking out against the dominant vendor in the CMS market. The fact that these perceptions exist is not likely to lead to greater market share or profitability for Blackboard.

EDUCAUSE is a non-profit association dedicated to serving its 2000 college and university members, as well as its 200 corporate members. We do not endorse

products or take the side of one company over another. Our corporate guidelines, established in 1998, are very clear that EDUCAUSE is primarily accountable to its institutional members. In the event of a conflict between corporate and institutional member objectives, we must support our institutional members. Let me clearly state that we are not siding with Desire2Learn at the expense of Blackboard. Our discussions and actions are based solely on the collective interests of our institutional members.

There are two core tenets behind the community concern. One deals with co-creation and ownership; the other deals with innovation. Course management systems were developed by the higher education community, which includes academics, organizations, and corporations. Ideas were freely exchanged, prototypes developed, and refinements continue to be made. The new EDUCAUSE Catalyst Award, given to course management systems this year, celebrates that course management systems "were conceived and developed among faculty in pockets of innovation throughout the world. They originated simultaneously at a number of institutions, as stated in the award announcement. One of the reasons course management systems were singled out for this award is because of the "fluid movement of ideas and initiatives between academia and the commercial sector as individual limited-use efforts evolved into enterprise-wide systems." Our community has participated in the creation of course management systems. A claim that implies this community creation can be patented by one organization is anathema to our culture.

We realize that what one believes is not necessarily legally binding. As a result, EDUCAUSE engaged the services of a highly reputable, independent law firm to review the patent. The preliminary conclusion is that the patent was very broadly defined and was inappropriately approved by the U.S. Patent and Trademark Office. That is certainly the view of the higher education community, many of whom are contributing evidence of prior art.

The other core tenet is to promote innovation. The free exchange of ideas fosters innovation. The open sharing of ideas does not preclude commercialization or profiting from ideas. Innovation is critical to the higher education community and it is critical to corporations. Blackboard has espoused the importance of listening to customers as its source of innovation. This law suit will certainly have a chilling effect on the open sharing of ideas in our community.

We believe that Blackboard should disclaim the rights established under your recently-awarded patent, placing the patent in the public domain and withdrawing the claim of infringement against Desire2Learn. We believe this action would be in the best business interests of Blackboard and in the best interests of higher education. We do not make this request lightly or underestimate the courage it

> will take to implement. However, we believe it is the right action for your corporation and our community.
>
> As EDUCAUSE members convene this week, this patent and its implications for innovation in education will be discussed more broadly. Now is the time for Blackboard to demonstrate why it is a leader in course management systems and listen to the marketplace that has been a primary source of collaboration and innovation. I, along with members of my executive team, are willing to meet with you at any time.
> Sincerely,
> …

The letter, in powerful words, expresses the deep concern of the IT community in higher education caused by Blackboard's legal actions. This letter also demonstrates the existence of what this dissertation describes as powerful networks in higher education. The desperate response of Chasen demonstrates the controversy surrounding the patent situation: "*Blackboard has been (and remains) a long supporter of EDUCAUSE and the important role it plays for the academic community, but we are disappointed that EDUCAUSE, an industry organization* (the emphasis is mine), *is taking public positions on its members' intellectual property and enforcement efforts.*"

Re: Blackboard Patents
by Marcus Green - Saturday, January 27, 2007, 2:37 AM

Looks like the US patent office is going to re-examine the Blackboard patent.

http://www.theinquirer.net/default.aspx?article=37223

Re: Blackboard Patents - Good news
by Udi Ben-Haim - Thursday, February 1, 2007, 11:23 PM

The Blackboard Patent Pledge

The intense pressure on Blackboard forced the leaders to consider other options besides using legal actions to enforce common elements in their patents. As a response to the pressure, Blackboard leaders come up with a pledge to the development community in February 2007. Here is one of the related postings on this matter:

Blackboard is making today patent pledge to the open source and home-grown course management community. announcing a legally-binding, irrevocable, world-wide pledge not to assert any of our issued or pending patents related to course management systems or transaction systems against the use, development or support of any open source or home-grown course management systems.
See Click Here
Congratulations to all!
Udi

The solution, however, was not accepted by all. Here is what Wyatt posted on February 2, 2007:

Re: Blackboard Patents - [not] Good news
by A. T. Wyatt - Friday, February 2, 2007, 1:15 AM

Also see here:
http://www.blackboard.com/patent/FAQ_013107.htm

Moodle is mentioned specifically quite a few times.

I think that this pledge is a poor solution. To me, it looks like a masterful "spin" campaign that, in the end, leaves the patent in place as a potent tool for the future. The patent should be revoked based on clear documentation of prior art.

Quote:
Blackboard hereby commits not to assert any of the U.S. patents listed below, as well as all counterparts of these patents issued in other countries, against the development, use or distribution of Open Source Software or Home-Grown Systems to the extent that such Open Source Software and Home-Grown Systems are not Bundled with proprietary

software.

Quote:
Blackboard hereby commits not to assert any of the U.S. patents listed below, as well as all counterparts of these patents issued in other countries, against the development, use or distribution of Open Source Software or Home-Grown Systems to the extent that such Open Source Software and Home-Grown Systems are not Bundled with proprietary software.

The language about "Open Source Software and Home-Grown Systems are not Bundled with proprietary software." could easily stifle some innovation in the future. It seems to me that BB is actually giving up very little here.

(I am a jaded cynic! Feel free to disagree!)
atw

Obviously, the actions of people changed the course of Blackboard patents.[97] The individuals, organizations, and businesses that demanded a review of the patent pushed Blackboard to first make a pledge not to assert any of its patents against the development, use, or distribution of open source software or home-grown systems. Although the pledge was viewed by many as a victory, the language, as shown through the postings, left some people quite skeptical about Blackboard and other future developments. Sometime after the Moodle Lounge celebrated Blackboard's pledge, another development shattered the virtual community.

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[97] Wikipedia states that in February 2008, a federal jury in Texas ruled in favor of Blackboard Inc. in its patent infringement suit against Desire2Learn, finding the rival company liable for infringing on its patent. One month later, in March 2008, the U.S. Patent Office issued a preliminary decision following its re-examination of Blackboard's patent application, which rejected the 44 claims made by the company. The Patent Office stated that it would give a final decision following a review of the patent.

Cool Kids and The Story of Little Red Riding Hood

An article posted by Josh Coates[98] on March 27, 2012 *Blackboard Calls it Quits*[99], left me quite puzzled and not with may clues. I was not sure how to understand the developments within Blackboard this time, nor did I quite understand the article's discourse, which instead of clarifying the situation, showed an open irony and a competitive spirit:

Yesterday Blackboard *announced* that it has officially gotten out of the LMS business. They are now an education software and service conglomerate. They now "own" the legacy LMS market by supporting 5 different LMS products (6 if you include the D2L cross-licensing agreement.)

Figure 4-10: The fence line just shifted again. (Title in original)

> In other words, they don't care what LMS you pick. They will gladly take your money for whatever flavor of LMS you choose, as long as they can bill you for generic IT software and services. In a lot of ways, they are becoming IBM (minus the research labs) which is known as the IT support provider of last resort - the shop to go to when your institution relies on outdated technology (yes, they still happily support COBOL and mainframes). Blackboard is now a full service company supporting the "late majority" and the "laggards".

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[98] Josh Coates is the CEO of Instructure, a competitive LMS based on Salt Lake City, Utah.
[99] Josh Coates Instructure http://voice.instructure.com/blog/bid/147398/Blackboard-Calls-it-Quits Tuesday, March 27, 2012. Retrieved on March 28, 2012.

But what about open source? Yes Ray Henderson talks a lot about open source, but clearly it's *eyewash*. Blackboard hasn't changed, but hope springs eternal.

And what about ANGEL? Yes, they gave ANGEL a temporary reprieve from life support. Give it a year or two, and it will be back on the chopping block. In the meantime, I'm sure they will do the absolute minimum required to keep ANGEL alive until they feel they can afford to cut it loose. They have 5 different systems they need to support and develop - when resources get tight, which LMS do you think will get the short end of the stick?

So, what's going to happen now? Expect more confusion. I don't think it requires much imagination to suppose that the Moodle and Sakai community will become even more jumbled and Blackboard will shove innovation even further back on the burner.

And what about Instructure? Most of our customers are former Blackboard schools. We rarely see Moodle or Sakai make it to the short list of any education institution. We launched only 13 months ago and have just closed our 128th school. Why did Alamo Colleges, Auburn University, Brown University, Maricopa Community Colleges and The Wharton School of the University of Pennsylvania pick us? Because Canvas is the *open, full featured LMS platform*, built on modern technology, native to the cloud. Instructure is about innovation.

And no, Blackboard can't buy us - *it's not all about the money*. (Yes, that's my

2011 W-2.)

Keep learning,
-josh

Not an Early April Fool's Joke

On the same day as Coates's announcement, another situation loaded by fear, panic, humor, and irony shattered the Moodle Lounge. A sense of tension, disappointment, and conflict became present in the virtual room since the first postings appeared that day. Although previous discussion forums show that Moodlers were familiar with Blackboard practices of technology acquisition, the acquisition of Moodlerooms and Netspot crossed what many in those communities considered a clear

boundary between proprietary and open source products. The acquisition of these virtual communities also violated the code of a mutual trust among members of a community who continuously volunteered and shared their individual work and ideas, working mostly because of their shared belief in a better education.

Capture 4-10: Love or hate for technology and software market

Some of the members felt betrayed by an organization they worked so hard to support. The highly valued principles of community, mutual help, and support, were strongly shaken by the acquisition.

On March 27, 2012 Blackboard announced the creation of "Open Source Service group" headed by Charles Severance, who was long considered an open source advocate and was founding chief of the Sakai project, an open source software project initiated by the University of Michigan. In a press release published on his personal blog the same day, Ray Henderson, the CEO and President of Academic Platforms at Blackboard, stated that, "*Both Moodlerooms and NetSpot have built a strong reputation for high quality service and support, which aligns with our deep focus in these areas and our overall*

commitment to providing LMS services and hosting globally." Importantly, Henderson emphasized that this new direction would allow Blackboard "*to provide the choice of an open source alternative with the benefit of a team of leaders from the open source community to guide [their] sustained contributions and citizenship in that community.*"[100]

Many members of various virtual communities expressed their shock at this shift within Blackboard. Tom Murdock, in his posting on the *Blackboard acquires Moodleroom and NetSpot,* considered the news as "*extraordinarily surprising*" [for many]. Lindsay Klein also stated, "*Like many of us here, I was quite shocked by this news*." In one post, Stuart Mealor stated that "*It's easy for people to feel disempowered by this* [news]." In addition, Bryan Williams, the Chairman of Remote Learner (an authorized Moodle Partner company that operates in US, Canada, and UK,) wrote: "*The acquisition of Moodle Partner companies is in keeping with Blackboards market disruption strategy, which began some time ago*."

"*Is this good or bad?*" asked Christopher Dawson rhetorically to a posting on ZDNetEducation on March 26, 2012. Then he added, "*It looks like Blackboard is giving up on innovation and instead is focused on commoditizing (sic) the LMS. Moodle, Sakai, Angel, BB 9.1 – it is all the same to them now. They want to make their money by offering generic IT service and software. Given Blackboard's decline in LMS market share, I suppose it's the only option they had.*" Even though the move appeared to be "a real shift in mindset of Blackboard," Coates observed that this development was still focused on

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[100] Ray Henderson. Evolution Unbound: Blackboard Embraces open source. Posted on Roy's Blog on 03/26/2012. Retrieved on 03/29/2012.

marketing *("Blackboard is in the business of making money"*). Although the development was an extension of Blackboard's market practices, many considered these acquisitions as a new stage for the technology.

Openwashing or Cool Kids with Shibboleth

Capture 4-11 shows a quote of Audrey Watters that became favorite for 39 people and it was re-tweeted 112 times. The tweet is a sophisticated criticism of Blackboard's practices of acquisition. The amount of sharing is an indication of strong approval and agreement against Blackboard capitalistic practices.

Capture 4-11: A diversity of meanings associates eLearning

Floyd Saner's posting about the acquisitions by Blackboard shows an attempt to understand the situation through conversation with his community. Those who respond to his posting are perplexed and disgusted, demanding answers while seeking solidarity.

by Floyd Saner - Tuesday, 27 March 2012, 5:51 AM

I'm baffled! Today Blackboard announced the acquisition of Moodlerooms and NetSpot, Pty….
Can someone help me understand this? What are your thoughts?
Not very cool (3)

by Art Lader - Tuesday, 27 March 2012, 6:25 AM

Now THAT'S pretty interesting. Have to wait and see what it really means, right?
Art

by Frances Bell - Tuesday, 27 March 2012, 1:51 PM
I am curious to see how community support evolves (here and at their own community space).

by Visvanath Ratnaweera - Tuesday, 27 March 2012, 5:24 PM
Interesting? Depressing I would say. Go through the history of open source acquisitions [*sic*] by the "enterprise" to see why.
Cool (1)

by Matt Bury - Tuesday, 27 March 2012, 6:32 AM

Capture 4-12: A mixture of signs and meanings

The path of evolution is clear... isn't it?
It looks to me like they're finally accepting what many Blackboard users have been saying all along. Everyone I've met in education who has to use Blackboard hasn't had a good word to say about it. I've often watched as tutors and researchers hang their heads and "admit" that their institution uses Blackboard.
The question is, can they make amends to rescue their reputation?
Cool (4)

Dave Willmore: This purchase by Blackboard of Moodlerooms feels like a slap in the face emotionally. Yes, I know that business must do the best possible for their shareholders and I am not privy to all that information that led to Moodlerooms selling out. Intellectually I understand, but emotionally I am angry and I feel betrayed.

Saner: The risk posed by this acquisition is not Moodle itself, but to Moodlerooms and NetSpot. I say this sympathetically. Moodlerooms is a good company dedicated to Moodle; I know many of the people there. I believe they want to see continued development of Moodle as an open source project. The risk to Moodlerooms and NetSpot? They now have to answer to ‘higher powers’-Blackboard and Providence Equity- whose bottom line interests may conflict with the spirit of open source. That will not be a small task.

Willmore: “…Moodle HQ and Moodlerooms have operated by offering improved product and services at a good price offering great value to their customers.”, however, “[t]his is not Blackboard’s or providence Equity’s philosophical mode to increase their bottom line. Both have shown in recent years that they will buy and terminate rivals

eliminating or limiting intellectual invention in educational technology in an effort to force others into their product sets. Those product sets are built to make it very hard for the customer to divest themselves to turn to other products. Blackboard has used the courts in an attempt to stifle all competition. They have shown no interest in the care or nurturing in their user base. Moodle core will be fine. Change and innovation may slow, or others may step up to void that may be left by the exit of Moodlerooms and NetSpot from the free (as in freedom) community. No matter what those companies say, they are now part of 'them' and not of us…

We are Busy Here, too

P4-D.H: As a co-owner of Moodle, I welcome this move because it affirms the value of a collaborative community of open source developers, teachers, and learners is more powerful than a proprietary , close source financial entity for promoting good education across the world.

It will be good for the community in the short run if Netspot and Moodleroom increase their contributions to the Moodle Trust. If they do not, I will be puzzled and skeptical. I am also skeptical in the long run, as M. implies, because Blackboard has a long reputation of being financially motivated and driven by legal shinanigans. Moodle is more driven by a spirit of collaboration. Can Blackboard change?

By the way, Blackboard has long expressed interest in becoming a Moodle Partner directly, but their offers were rather self-centered or perhaps out of desperation. This acquisition shows they were truly serious or truly saw the end of a commercially-viable proprietary system.

I am curious who benefited from the financial windfall of the acquisition. Presumably, the Moodle Trust did not and as a co-owner of Moodle (among millions of co-owners) we did not directly benefit. I hope those who received millions of dollars realize that much of the value of their enterprise was created by thousands of teachers who enthusiastically sharing with another teacher how to make a forum or a quiz in this lovely LMS.
(1Very cool)

P5-M.G: …This affirms little or nothing. Blackboard is about making money and protecting its market share, and it has moved through its segment with that in mind. In fact, one could argue that with the sudden and increasing success of [C]anvas as contrasted with Moodle that Bb is simply looking at trying to offer an open source alternative to Canvas. (1 Cool)

P6-DC: SAKAI as well…Bb has a little bit of credibility to win back for me personally, having sullied my reputation with the WebCT> (sic) Bb migration I did training for, where it was a case of "Shoot the messenger" and "reduce trust with the shift of Moodle" My firmware has quite a lot to be changed….How much in the way of stuff transplants and blood transfusions can shift a culture?

P6-M.B: Blackboard was bought out by Providence Equity Partners venture (vulture?) capitalists, who specialise [*sic*] in leveraged buyouts, last year. Presumably they borrowed the 1.64 billion they paid and need to see significant return to that ASAP.

P8-M.D. (My note: M.D is the owner of Moodle): I will post more fully later once the dust settles (very busy here too!) by I wanted to add a new facts here to add to the mix:
I was not involved in their deal at all (I found out only days ago myself) and have not been paid anything to support their deal.

I think it's prudent to wait and see how it works out. There are a lot of strong Moodle supporters involved inside Moodlerooms and Netspot and they have the best of intentions towards the software and the community…
Moodle itself has not, and will not, be purchased by anyone.
We still have a lot of other Moodle Partners!
Finally, I 'm finding it really useful to read everyone's analysis and options to help shape my own actions- thank you so much everyone for your support.
… (17 Very cool)

Mr.Splashing Pants or Angry Kids

P13: Mr. Splashing Pants:
"I was not involved in their deal at all (I found out only days ago myself) and have not been paid anything to support their deal."
Threading the needle Martin? Technically, you weren't involved in the specifics of deal in that you didn't negotiate it, and technically you found out only days ago that the deal actually went through (but you've known about the Bb/Moodlerooms talks for a while now) and technically you weren't paid to support it, but you made millions off this Moodlerooms buyout.

Getting your personal buyoff and support on the deal was a key part of Chasen and Henderson's decision to pay for Moodlerooms. You are a significant Shareholder in Moodlerroms. Blackboard required your support before the deal was closed. You made millions off this deal. Don't feign financial disinterest in the transaction.

"…Finally, I 'm finding it really useful to read everyone's analysis and options to help shape my own actions"

You owe the community full disclosure of the financial interest you had in this deal happening.
(15 Not cool)
P.14- M.D: This is completely false and an utter troll. It doesn't even make sense. Grow some balls and step out from behind your pseudonym so I can sue you for defamation. I could use the money.

by Mr. SplashyPants - Wednesday, 28 March 2012, 4:16 AM
Martin - it makes perfect sense. It's very simple:
What we want to know is do you have, or have you ever had, any stock, stock options or any form of equity in Moodlerooms? YES OR NO? (Emphasized in original)
Not cool (4)

Cool Kids, Bad Memories

By following the Internet discussions on Blackboard's purchase of Moodleroom and Netspot 95, I came to read the comments made on Slashdot, a technology news website self-described as "*News for Nerds. Stuff that Matters.*" In contrast to the discussion of the topic in Moodle Lounge, the discussion of the acquisition on Splashdot, a virtual community of developers known for their open source preferences, evolved as a series of personal stories about Blackboard's technological features and users' experiences with that technology. However, by reading the conversations it becomes clear that capitalistic practices of Blackboard instead of technical issues are the real reason why so many people in the field are disappointed with Blackboard.

Posted by timothy on Tuesday March 27, @10:44AM
Blackboard, the proprietary giant in the learning management software market, has purchased two companies, Moodleroom and Netspot... It will be interesting to see if this move leads to an exodus from Moodlerooms and Netspot, since many of their clients were intentionally trying to avoid doing business with Blackboard.

MoonBuggy (611105): […] I can say without any exaggeration that Blackboard is probably the worst piece of modern software I've ever had to use. Moodle's certainly not perfect, but I have found it absolutely fine in general day-to-day use: Blackboard is slow,

buggy, and has a web interface which manages to disable such revolutionary new browser features as ‘the back button’, and ‘middle click’.

Pavon (30274): Blackboard is one of those products where the idea is great but the execution is horrible. Compared to having to maintain a website themselves, it is a huge step forward for teachers and students. It enables them to do things that most education It departments didn’t support before, like discussion forums and per-student access permission (for grades, feedback etc). Compare to any other popular webapp [sic] however, it is complete shit. It’s like all those horrible intranet applications sold to business that are completely dependent on plugins just to serve static content, require 7 clicks to do something that should require 2, have poor browser support, break when you do normal things like click the back button, and seems to get worse with each new release.

Toadlife (301863): One of the things I remember about Blackboard is the regular re-introduction of old bugs. Blackboard would fix a bug and the bug would come back a couple of releases later, at which we would have to prove to Blackboard support that the bug had come back; because of course they had it in their hand that they had fixed it. And of course, Blackboard would take several months to fix any bug that had any kind of workaround, even though many times the workarounds were completely unreasonable, like IE7 compatibility workaround: ‘disable every security feature of Internet Explorer 7’.

ngg (193578): break when you do normal things like click the back button, and seems to get worse with each new release. Yes, but after (how many years?) the latest release fixes the race condition that would delete an entire class’s worth of grades if two teaching assistants (who teach, say, different lab sections for a single lecture section) dared to upload grades at the same time! The same release forces you to triple-click on a cell to enter a grade, but hey, we’ve almost advanced to 1960’s-era databases!
But in all seriousness, I don’t know a single professor in the department who use Blackboard if it weren’t mandated for all courses by the university administration.

Toadlife (301863): Using Blackboard is bad enough, but to get full effect, you should try administering it. (Emphasized in original.)

Canazza (1428553): Or developing it.
It’s the opposite of intuitive, I had to have someone take me through how to upload a simple SCORM course first time. It’s buried about six menus, half of which tend to be un-lat-tagged generic icons. Needless to say that a year later when we had to do it again I had completely forgotten how to do it.
It’s *really* clunky, and everyone I’ve seen uses frames like they’re going out of fashion.

Datavirtue (1104259): Right now there is shit storm brewing because I added a bunch of wait-listed students to a course. The only thing is, I deleted them after adding them. Guess what, wait-listed students are logging in… Blackboard admin, oh the fun.

Toadlife (301863): Manual additions and enrollments caused a bit of grief and confusion to us too. We solved the issue by banning the manual creation and enrollment of students. The only way a student could be added or enrolled in a class was through the snapshot process. We only ran it twice a day, so students would have to wait up to 12 hours to get into their class, but it eliminated a common source of confusion.
I talk in the past tense because we've moved onto another LMS.

Anonymous Coward (#39487773): [Blackboard is] non-dynamic, single platform, buggy software is meant for the 90s, the only reason they are still in business is because people are too lazy to switch off them.

Jmerlin (1011064): …Even something as simple as monitoring their service was a nightmare. The tools they provided almost always hung when opened. I had to reverse engineer the protocol they were using and write an app that would detect when a service was having problems and auto-restart it. One service would just kill itself if it got too many errors (as I was told by one of the engineers, it maintains a count of failed actions, if that counts gets too high, the process either hangs or exists0, and these errors were internal, not really "errors" and happened at a very rapid rate. I just can't comprehend that level of bad.

Toadlife (301863): For awhile they shipped a buggy version of tomcat that could not close the threads it opened. This resulted in tomcat seizing after a week or so being up. I spent two weeks troubleshooting this and was literally advised to "RTFM" by Blackboard support when I contacted them for help.
The kicker? Blackboard was never aware of the bug until they accidentally fixed it by shipping an updated tomcat binary with a new release.

MisterSquid (231834): This is 2012. I understand academia moves slowly but I certainly expect more of services provider for education than horrendous table-based layout from 1997.

Anonymous Coward (#39484531): …We have to almost fight with [their technical support] to get things done sometimes and the only thing they can manage to do with reasonable turnaround time is notify you of outages (caused the majority of the time, at least for us, by their mistakes).

Superflippy (442879): It's been almost a year since I last worked at a university. I had almost forgotten about all the "Blackboard outage notice" emails that used to fill my inbox. Thanks for the memories, AC.

Seta (934439): Sorry to dig up bad memories. If I recall some of the latest issues we've had with them…they like to add servers to our server pools without notification or coping customizations. They also occasionally try to mis-represent the amount of used disk

space, sometimes by tens of gigabytes, to try to get us to renegotiate our contract. Bug reports generally go unanswered for days and sometimes can span for weeks at a time only to be closed with "it's not a bug, it's a feature that can sometimes be used maliciously to compromise the integrity of your database" (obviously paraphrasing a bit…
Betterunixthanunix (980855): To be honest, I have had better experiences with home-grown systems than with prepackaged software. My alma mater got rid of their home grown system in favor of Banner (by Sungard) and it was a complete disaster, after having flirted with Blackboard (which was less of a disaster but still terribly annoying). My current school uses Sakai, and it is just awful compared to the CGI scripts that professors sometimes write.

Fallen (230220): I'd be willing to bet my last dollar that Blackboard getting adopted by schools can be summed up in one word-kickbacks…

Hectomaner (2604741): I'm sitting in my office having lunch and I got really excited because the company I work for (Blackboard) made Slashdot! And then I started reading the comments…I have read a few extremely negative comments directed towards the company that I think do a wonderful job at pointing out some severe flaws, which I will be forwarding to several people. Thanks for those.

Cwgmpl (853876): You work at Blackboard and are only *now* becoming aware of the terrible reputation you guys have developed in schools over the last ten years. Just how out of touch are you?

Kalriath (849904): You guys should really get out more, and remove the Outlook rule you clearly have to delete every email from your customers. And check your voicemail and clear the letterbox sometime, because I can't imagine there's any contact method that hasn't been used to tell you that Blackboard sucks donkey balls."

Hanging with the Cool Kids?!

On his personal blog, Roy Henderson[101] added the following note about Blackboard's acquisition of the open source projects: *"Over the past two years we've updated our vision for education and our changing role within it. We've added a range of both software and services products to our portfolio that reflect a broadened focus—on*

[101] Ray Henderson from Ray Henderson blog http://www.rayhblog.com/blog/2012/03/evolution-unbound-blackboard-embraces-open-source.html

the whole student lifecycle within the institutions we serve, rather than just online homework and related work." As usual, the changes in Blackboard are explained as a process of reflection, as working toward a better education, and as improving upon past practices. It should be added that even though the situation within Blackboard developments has escalated from complex to sophisticated, people have been able to make sense of the developments, often working together to develop a critical analysis. These understandings demonstrate that even though the software technology is new, the capitalistic practices surrounding the technologies remain familiar; people already have the tools to situate Blackboard in a critical framework.

Matt Bury: Blackboard was bought out by Providence Equity Partners venture (vulture?) capitalists, who specialize in leveraged buyouts, last year. Presumably they borrowed the 1,64 [sic] billion they paid and need to see a significant return on that ASAP. Leveraged buyouts are usually about a fast turnaround and how to extract the biggest possible return in the shortest possible time regardless of the long-term outcome. If they destroy Moodle and/or Blackboard in the process, that's just business." Generally speaking, I, however, found the expression synthesizing the forum people's fears, worries, and disappointments.

As Saner commented later on, what made he worried was first, that Blackboard is now owned by Providence Equity Partners who "has to be involved in a decision of this magnitude" because "[t]he bottom line with conglomerates is mega $£€¥." Second, Blackboard does not have any good track record on maintaining acquired products. Those products are mostly "*discounted, proprietarized [sic] or morphed into Bb products*." Third, based on Saner's opinion, the real danger of these transactions is that "*Blackboard will pressure Moodlerroms into developing MR's Power and Jaule products into more proprietary products […] to an extent that essentially prevents users from moving back to Moodle core. This is a key issue*." For Saner, it is unfortunate that "*Blackboard makes major strikes behind the scenes, without warning, and by keeping many people in the dark […]. That is the big corporate model; it is Bb's model. It is driven by profit and domination*." "*I really, really want to believe Ray Henderson, but I also grew up with the story of Little Red Riding Hood*."

"I'm very familiar with Providence Equity. I was a long time client of one of the companies when merged Schoolfusion, Teacherweb, and Schoolworld into Edline. I will not say which one but let's just say that I watched the company grow from 3 people to

40^. PE approached the majority owner and presented an offer. The offer was accepted and PE sold the owners on the idea of creating a super Platform with all 3 companies. Little did they know they only wanted technology and the clients. The goal entire time was to roll everything under the Edline name and platform. I don't feel bad for the owners because they walked away with millions but it's the business ethics of PE which is the concern. Schoolfusion and Schoolworld are no longer sold and all those clients are being forced into Edline. Such a shame…The Edline platform is junk code built upon junk code. Edline is inferior to Schoolfusion and Schoolword. The goal the entire time was suck up 2 major players which leaves only Schoolfusion and Echack left in the WMS market. Edline is now free to overcharge and offer a crap product."

Willmore: What do I see happening: 1. Hosting prices going through the roof. 2. Moodlerooms Moodle development slowing down and eventully [*sic*] ending.

Jeremy W.: I'd like to think that Blackboard feels threatened by Moodle and tries to use Microsoft's old strategy via Embrace->Extend->Extinguish.

Matt Bury: The main source of worry is for employees of Moodleroom and Netspot. There is a lot of valuable expertise in those companies (their main value?) and I think they could easily find work elsewhere if that should ever become a necessity. Let's hope not. I think they're in a strong negotiating position and if they haven't already done so, now's a good time to get unionized [*sic*].

Stuart Mealor: Bury stated that corporations have " a big bag of tricks" to prevent migration from their products and services. [I]'s a core strategy for all of them to make their products and services "sticky", i.e. difficult to change or get rid of it. Obvious examples, Bury wrote, are "proprietary formats, proprietary customizations, spreading FUD about switching issues, pushing long term contracts that are difficult and/or expensive to get out of, contracts that require large downpayments on expiry so that they can offer to waive the downpayment if you renew the contract (so called "balloon" contracts), etc."

David Colucci: …Blackboard only stands to do one thing on this deal and that is driving the price up of Moodlerooms… [Blackboard] just passed 85% of the market share of LMS's and it's own by a corporation uninterested in the Open-Source concept…Corporate rich guys better take a long walk down the alley and hand out with the Open-Source environment to get an idea of their plans.

Guido Gautch: Hi David, Im not sure if it's as sinister as that. Bb has a terrible track record. I agree, but to me this seems to be a simple attempt at diversifying and hanging with the cool kids, smoking open-source cigarettes (smiling face)…Large corporations have one objective: making more money. Since the traditional model of buy-starve-kill doesn't work with Moodle being at large, strong community that it is, PE/Bb has to join them rather than fight them…

Don Hinkelman: …Well now, Guido. Read that book by Walter Isaacson and compare Apple philosophy under Jobs and with the Hewlett Packard philosophy under Leo Apotheker. Under Leo, a finance guy, HP talked about market shares return on investiment [*sic*], and even quitting their core business (PCs) to focus on "greater margins". Jobs on the other hand, was a product guy, and said things like, "we love music" or "this is insanely great". The engineers and designers ruled Apple and Steve insisted that profits were always second priority. Well, Apple made great profits but only because they did their core mission with such passion and singularity. So, I would say…The best corporations have one objective: making great products and services.

Anne Krijger: So what is all the fuss about?... My guess is that BB-do-indeed want to expand their services in the Open Source arena by acquiring these two companies they can now claim: 'Company (BB) Now One of the World's Largest Education Open Source Service Providers'.

It may seem logical to stop telling the Blackboard story here, after Blackboard Inc. was sold. Shortly after the company was sold, the leadership was replaced and much of its mission and perhaps its philosophy was changed. Rather than operating as a single LMS, Blackboard Inc. currently provides a packet of services for teaching and learning. For many of us who still use Blackboard for online teaching, the technology remains essentially the same. The technology may even be working better now, but no one speaks of the product in laudatory terms anymore.

Although the contract between the University and Blackboard is due for renewal, many within the faculty feel indifferent about the future of this technology at the school while many others simply feel disappointed by the options in LMSs.[102] We are not connected to Blackboard through any nostalgia, but through our work: our knowledge, skills, and memories. This ethnographic account of Blackboard, would, however, have

[102] On March 22, 2013 I attended an online discussion on MOOCs as a new trend on online teaching organized by the Office of Teaching and Learning. On the 52nd minute of the recording, (https://www.anymeeting.com/WebConference-beta/RecordingDefault.aspx?c_psrid=ED55DA87814F) one of the attendees repeated the same train metaphor already known from the Jenkin's article.

limited value if it were not linked to the larger development of Internet platforms for teaching and learning, situating Blackboard within a larger capitalistic narrative and demonstrating how different groups in society affect each other through the developments of technology.

CHAPTER 5 : CONCLUSIONS

Figure 5-1: Users, even after life

At the beginning of the 21st century American higher education continues to make important contributions in the fields of science and technology. However, developments in the use of instructional technology demonstrates an institutional shift from decisions made with a focus on the public interest in learning toward a fetishization of technology use for educational purposes. The rapid involvement of LMSs, and eLearning technologies in general, in this domain has provoked a public debate over what value these technologies are creating: are these technologies advancing the quality of higher education by focusing on learners' needs, or serving to commodify the learning and learner by marketing these technologies as a social value?

This dissertation argues that this debate cannot be adequately comprehended nor resolved by focusing on the technology in isolation from the social contexts where it emerges; technology does not in itself commodify the learner or determine the outcome of learning. To show how commodification is at work in the global education market, this

study investigates the developments of Blackboard software in its context by analyzing the discourse surrounding those developments, demonstrating how these technologies work on the ground and how the educational institutions become intermediaries among the market, technology, and learner through their philosophies and practices, and showing how learners resist the market idea by transforming and resisting the use of technology.

The study focuses on the culturally constituted domain of *user phenomenon*: the complicated cultural processes of producing a user, which links the societal institutions, the technology, and the market in the field of education. In American higher education, the use of Internet applications for teaching and learning is an outcome of long networking processes involving corporations, educational institutions, and government agencies. The implementation of these technologies in education has never come directly from a single, centralized national or political mandate. Instead, the concept of eLearning technologies and their involvement in the field education is an outcome of a long process strategically designed to create a social environment in which these technologies were promoted as both institutional and individual means of improving education. The idea was culturally constructed as a social need and legitimated by law. In this process, the use of Blackboard LMS, for example, was culturally constructed as a social value.

This situation, still infused with ambiguity and uncertainty, allows for considerable discretion in the local technology practices. Educational institutions have become mediators among learners, market, and technology, acting as the de facto interpreters of the public interest in learning and eLearning technologies. Although institutional practices must be understood as mechanisms through which

commodification or education are achieved through collective work, learners themselves also appear as active actors whose beliefs, understandings, and practices resist commodification at various levels.

This dissertation considered the commodification within higher education by going beyond an analysis of the technology and its systems of deployment itself by examining the historical-political conditions that gave rise to Blackboard LMS and the contradictions embedded in this technology. The study was designed to investigate related micro- and macro-level organizational patterns that have developed in the context of political, economic, and technological changes associated with the Internet culture. By examining both these practices and the discourse surrounding them, the study considered how they impact learning and learners. The analysis uses examples drawn from ethnographic data collected from the everyday life of actors involved in Blackboard technology at both macro and micro level. This approach to the analysis does not take the discourse (official and public) surrounding eLearning technologies just at face value when considering the experiences of learners with those technologies on the ground. It draws attention to the specific mechanisms through which commodification is both enabled and resisted. The study suggests that structural conditions, particularly those associated with LMSs, have influenced patterns of practice, indirectly advancing a neoliberal project of learner commodification.

Technology

This study advances an understanding of how market philosophy and practices are expanding into the field of education by building a *user's culture*, a whole system built to

advance a neoliberal project of learner commodification and in which the use of eLearning technologies is promoted as a social value. Rather than considering eLearning technologies (and Blackboard LMS in particular) and user as two separate entities, this study embraces the idea that technology is a social affair that can be read and analyzed through the surrounding discourse. By emphasizing the cultural patterns that link human work and organization with user production and user networking within Blackboard technology, the study demonstrates the strength of an anthropological approach in the research on technology, globalization, and education.

Generally speaking, technology remains one of the most transformed human universals, a transformation, which is closely related to the changes at the level of knowledge and skills accumulated by human endeavors through time. These transformations are also closely related both to how human work is organized and to the political and technological conditions of that work. Without this understanding, Blackboard software and other eLearning technologies would remain a difficult object of research for multiple reasons. First, there is a lack of a shared understanding on the general definition of technology. Second, the Internet technologies with a pre-condition that provides for the development of non-market productions have also allowed for a further social confusion on what these technologies are, a fact used by the corporate strategically for a further glorification of technology in the eyes of the public. Third, it is difficult to approach technologies in education, a field long recognized by the public as a social domain separate from a corporate agenda, by explaining the extension of capitalistic mentality and practices that accompany them.

It is also necessary for new basic research to provide a clearer understanding on the context of a technology behind the surrounding discourse. It is simply difficult to reach beyond the aureoles surrounding software such as Blackboard which are widely accepted by the public upon their promises for a better education and on which, mistakenly, there is a shared understanding that technology failures are always user's issues. Similar to trends associated in technology developments during the time of Industrial Revolution, we are witnessing and immersed in an intensification and extension of the glorification of Internet technologies. Corporations during the Industrial Revolution sought to domesticate industrial technologies by attracting industry workers through the glorification of the new technology; the main goal of corporations in the so-called Internet era is to transform each member of human society into an Internet technology ***user***.

In this context and through these analytical lenses, this study refuses to accept the idea of technology as "mere tools." Instead, it demonstrates how a working concept of technology should highlight (1) human work, knowledge, and skills organized under certain rules and under a single purpose and (2) the nature of technology itself as a repeated process or set of processes. Only through such recognition can the working concept of technology (as the organization of heterogeneous elements from natural to social) become inclusive enough to allow a researcher to both depart from the focus on a "mere tool" and seek explanations beyond it.

Contemporary technology allows for organization of human work under capitalistic trends and philosophy. In these terms, the Internet technology becomes

significantly different from any pre-capitalistic technological attempts to satisfy basic needs. In contemporary times, there are no technological activities that are not involved in political purposes. Thus, there can be no understanding of technological trends in the modern American education system without a deep understanding of the context that provides for the organization of human work when implementing and maintaining LMSs application.

The technological impact of the Internet has its roots in the historical and socio-cultural fabric of contemporary life. The Internet and its applications, social tools assumedly devoted to human interconnections without limits on time and space, are products of a worldwide infrastructure built carefully and purposefully for increasing profit in fields other than industry such as entertainment, communication, health care, and education. We have learned that a technology does not typically succeed by serving the (human) purpose better, rather its success is more often determined by rapid acquisition of users, maintaining a user network, and controlling the user's mood and identification with its use to the point that each user feels compelled to continue using the technology despite extra work that must be done in this process. We see eLearning technologies become entrenched within educational institutions as these institutions work to build an adequate infrastructure for supporting those technologies, which includes producing and maintaining the users.

In this respect, calling a technology a "simple tool" or "user friendly" masks the reality of commodification along with the hard work and resistance to that technology. Creating a picture of technology within education requires a holistic understanding. The

eLearning technologies are not material products that are individually consumed. Internet applications such as LMSs exist through users' communication. Therefore, it is an institutional necessity to organize an infrastructure that would provide for this type of communication, a development that additionally requires frequent software updates and an adjustment of users' skills and knowledge. The institutional infrastructure is, however, not an entity of its own. Instead, an institutional infrastructure exists as an extension of a large-scale communication infrastructure involving the Internet and Internet technologies. An institutional infrastructure is mainly a direct expression of the user networking through which the institutions learn how use products and share how to provide for technologies and their users. The network is so well organized that an institution must apply for, pay for, and receive an address through the edu domain administered by EDUCAUSE, an ever-expanding network among corporations, educational institutions, and government agencies. It should be understood that technologies such as Blackboard LMS are products of networking rather than the networks being a product of Blackboard.

Networks

While the history of modern capitalism and capitalistic philosophy in American society is already in its third century, the first glimpses of the market dominance mentality in the field of education developed in the meetings of the IBM 1401 user groups following World War II. Through these IBM-sponsored meetings, educational technologies were gradually transformed from simple technologies of recording data into technologies of managing data. This development led to eLearning technologies as we know them. Fueled by a neoliberal philosophy – known for its fetishization of the market

and for a strategic discourse that aims at the glorification of technology – eLearning technology developments are preceded by the incremental building a network that includes, but is not limited to, corporations, educational institutions, and governmental agencies. The network, symbolically called "the network of users" in this study, is a network in the making. It increasingly aims at a culture of use, a culture that glorifies technology and makes its use appear as a social value.

Corporations have expanded their market goals into education through the development of specific networks, by sharing ideas, rewards, and powers: the network of users in education appears as a network of powers. The network appears with the social prestige that education has gained in society during the years when education proved itself as an important social value. It is through this influence that the network becomes a source of information and expertise affecting law that legitimates the involvement of technologies in education. This action has a dual effect: it paves the path for greater involvement of technology in education and, at the same time, gives more powers to the network, the powers which are exercised through inclusion and exclusion.

The study demonstrates that the expansion and replication of the IBM 1401 user group into hundreds of similar groups within higher education occurred through the strategic practices of standardizing, sharing, and rewarding. Through the connections, affiliations, and relationships among representatives in academia, the corporate world, and American government agencies, the user network aims at a consolidation of what can be described as a "culture of use," a shared understanding that views technology use as a cultural value. As it became clear from the many official documents collected through the

study, the corporate world has been strengthening its presence within higher education in numerous ways. The developments of the Internet were a good opportunity for businesses such as IBM to explore and penetrate the field of education as a larger source of profit. While no one can deny the benefits of Internet connections in the field of education, making those technologies a learning goal goes against the profile of education as a public domain dedicated to social learning.

The situation appears bi-folded. Noticeably, the community of higher education in American society has a respected reputation in the matters of learning, technology, and science, but also for its leadership in democracy and freedom. As various sources have shown[103], the professors and some of decision-makers within the community of American higher education have often expressed their concerns on how the education system and its learning is appraised against educational technologies. Controversially, the practices followed by powerful associations such as Educom and Cause are not without capitalistic reminiscences. For a while, each of them worked on their own by exercising a power of both inclusion and exclusion through membership, gatherings, and recognition. Each of them, until they merged into one association under a single leadership, created their own specific connections with the corporate world, often associated with financial and material support and through mutual benefits. The evidence suggests that both of those networks also possessed a networking power or a power over their respective member-institutions. The most significant power, in this respect, is the power to program new networks.

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[103] Jenkins' article is only one of hundreds similar articles published in the Chronicle of Higher Education.

A different picture appears on the ground where the educational institutions become in charge of building an appropriate technology infrastructure and maintaining technology user. Both of these actions require a tremendous effort, organizational power, and collective work, activities hided by the discourse that describes these technologies as merely tools and user friendly. Interestingly, the systemic issues – a normal, expected occurrence when operating large technological systems – are often described as user issues, leaving learners quite confused and unsatisfied.

Users

In this study, the term user, unless differently stated, has been specifically related to the LMS of Blackboard. In general terms, a user must be seen more broadly as representing a complex and sophisticated phenomenon in higher education, one that works toward the commodification of learner. The networking seeks to increase the number of learners involved in eLearning technologies, but this process is filled with human learning, struggling, and resistance. To my surprise, during my fieldwork observations, I discerned that the term user was barely used in the everyday conversations or work of the people at the University. Only in certain situations would some workers use the term end-users; only one of the workers at the University used the terms power-users and crucial-users in our conversations. Although the definitions given for each case were quite ambiguous ("students," or "students and professors," or "all the people who use Blackboard for teaching and learning;" "non-experts" for end-users and "experts" or "people who work with Blackboard" for power-users; and "faculty," "professors," or "teachers" for crucial users), the general indexing of these terms made

me aware of the unevenness within user category. Rather than describing an individual who simply physically used or manipulated technology, the category of the user represents the dynamics of a multi-faceted human-technology relationship.

Importantly, it was the "natives' talk" about end-users, power-users, and crucial-users that prompted me to analyze the related semantics and to discover that Blackboard users were categorized based on an imagined individual level of knowledge and expertise on Blackboard software. This assumption about the individual knowledge and skills of the users caused many categories of users to be given multiple terms; in the case of professor-users, some of the people listed them as end-users and others considered them crucial-users. Interestingly, the institution was not considered a user at all in any of the conversations I had with members of the University. The confusion cleared up after a careful examination of Blackboard software in its own processes both locally and in a wider context.

I started my analysis of the user by listing the LMS users as they identified themselves when they called the Help Desk: an LMS user could be a student, a professor, a technician, or even an administrator. These users appeared similar based on a single criterion: each was somehow involved in the system operation of Blackboard. A further analysis discovered that, although it was qualitatively different from the users calling the Help Desk, the University also met the criterion of being a user, one with special decision-making powers. After an analysis of the initial set of Blackboard users at the University, the criteria of being a Blackboard user was extended to include: one somehow

involved by work in the system operations, one that posses certain skills and knowledge to operate the system, and one that can affect the system developments.

Student-users

Based on this set of criteria, the study observations suggest that the student-users (also assumed as end-users) are quite interested to use Blackboard as long as they believe the system provides them with what they need for their education. A student-user who becomes exposed to the idea of online classes and likes it, may continue to operate the system and may even use their individual effort to improve the technology when the student feels it is worthwhile. If a student-user does not feel that the technology meets their educational need, then the student-user may quit without regret; a student-user does not necessarily have technology operating for his or her own educational agenda. Some student-users are forced to use technology even when they would prefer not to, especially when a required course is offered online only. From my observations, the student-user's impact on software developments within an institution is unintentional, indirect, and quite limited; this kind of user often only affects the system through feedback when reporting, "Blackboard doesn't work," and by looking for temporary solutions.

Professor-user

A professor-user, or the so-called crucial-user, is a kind of user that deserves further attention for its crucial role within the system activity. As Jenkins states it in his article, many times professors are left with no alternatives but take the seat of a user or

get left behind. From my observations, the feelings of the faculty towards Blackboard LMS do not appear so dramatic. At the University, the online teaching is not result of any contractual agreements, which may give the impression that teaching online is a matter of individual choice and enthusiasm. Those who work for the LMS support team at the University are often confused as why the professors ("the smart people") call them for help with technology ("shouldn't they Google it?"), mistakenly assuming that a faculty member should also be a technology expert. My indirect observations on this matter suggest that in spite of a number of professors who teach online teaching and who consider this process beneficial, the rest of the faculty show no particular enthusiasm for using this technology and do not truly believe that effective teaching happens online. From this group, many consider online teaching as a temporary trend that could not change the value of "real teaching" anytime soon. They feel no guilt or regret for not involving Blackboard in their teaching methods. Some of them even excuse themselves with statements like "my course can't be taught online."

Even though there are different reasons why professors may decide to teach online, the observations suggest that some of the reasons are related to the open market for the non-tenured faculty, to a matter of overcoming new challenges, or to the possibility of being rewarded with future professional references. The professors who decide to become Blackboard users, however, accept an extra responsibility to their teaching role, one that is not articulated in any official contract. By doing this work, they become social connectors among the institution for which they teach, the students they teach, and the producers of software they decide to involve in the teaching.

This process of becoming an online educator forces faculty members to take on additional roles and responsibilities. First, the professors must acquire the knowledge and skills needed to run a certain product such as Blackboard, work usually done voluntarily without compensation. Second, these faculty members take on the obligation to share technology knowledge and skills with the students they teach, becoming troubleshooters for their courses. Third, these faculty members take on the pointer role by giving feedback about what is working properly with software, by giving advice on how something can work better, and even by requesting new features. There is however a limited institutional recognition on the role and the impact of professors in the developments of LMSs or other software applications within institution, a fact demonstrated by the limited number of teaching faculty in the decision-making bodies on topics surrounding technology use. This exclusion is usually justified by saying, “the professors don’t come” or “they don’t care.” Yet when considering the neoliberal project presented by these technologies, the exclusion of professors in these bodies may be rooted in the political landscape of struggles by teaching unions, a redefinition of teaching rights, and administrative attempts to replace teachers by technology, as Moe and Chubb stated in their article.

Technician-user

It seems that an LMS technician or administrator user, referred to as power-user, should be counted as a separate category from students or professors; these users work directly with the technology and other users in exchange for a salary and other rewards.

In terms of skills, knowledge, and work dedicated to the system, Blackboard technicians or administrators are quite active users. They continuously learn, test technology, improve their skills, share their work, and even teach others. People in this category are also able to modify technology features based on if they believe "it is going to work for us." Their supervisors have strong voices in the institutional decision-making in regard to LMSs, but the technicians also have to follow the orders of their superiors and "make technology work" according to the institutional mandates. The data I collected my fieldwork at the University suggests that these users become important connectors among institutions, technology, and other users not only by giving feedback but by also becoming actively engaged in product modification. Along with their troubleshooting skills and knowledge, their services impact users' feelings and moods as well as influencing the institution's reputation. Representatives of this group possess the institutional power for technology transformations and alternations by being given the ability to make changes to the technology based on what they judge would work the best for their institutional situation. Although they may not be able to perfect an eLearning technology like Blackboard, they are the ones keeping the technology running for the other users within the institution.

Big-user

Three other subcategories of users deserve further attention: the institution-user or the so-called big-user, the software developers (symbolically called the user group of others or just the Other), and the non-user. Big-users are institutions with contractual

powers relating to the LMS. This is an analytic category. When asked whether the University should be considered a Blackboard user, some of the participants looked confused, a confusion caused by the commonly-shared impression of users as individuals. As a matter of fact, some official Blackboard documents make a distinction between users as the *end-user* (a term they use mostly for students and occasionally for professor) and *users* used in plural to denote the clients of the software.

Big-users both affect the developments of eLearning technologies and create the specific context of use for the other users of the institution. As the creators and enforcers of local technology policies and procedures, educational institutions take on a many responsibilities for the LMS: building and maintaining the technology infrastructure, choosing certain technologies to be used at the institution, providing for an adjustment of user's skills and knowledge, selecting the use of and giving feedback on LMS features, and also ensuring the so-called user-satisfaction throughout the process. The research from the University suggests that the decisions made on technology developments are deeply rooted on an institution's culture and political landscape, which both affect how a technology is perceived and how systemic issues are resolved. Big-users cannot be considered passive users. Even though they may be members of large networks such as EDUCAUSE, their technology decisions also depend on how they, or their leaders, are situated into the network structures.

The Other-user

The category of the other-user or the Other is another analytic category developed during the course of the fieldwork. Originally, this group of users was under a question mark: a group of software developers who are familiar with Blackboard, know a lot about it, but "hate" it. Based on their skills and knowledge, this group could qualify as users; based on their lack of activity on Blackboard, they may qualify as non-users. Separation from the teaching and learning processes of Blackboard technology makes the Other-user qualitatively different from the rest of users who usually work and are organized under a certain institutional umbrellas. These users influence the public discourse surrounding the use of eLearning technologies even though they may not have to use those technologies. The observations show that the interest of this group of users on Blackboard appears quite sporadic; these potential users appear as virtual formations created during a certain time and in regard to certain Blackboard developments recognized in this study as Blackboard patent, the lawsuit against Desire2Learn, or the purchase of Moodlerooms and NetSpot.

The *other* of other-user is a term borrowed from anthropological discourse, aiming to show how this group-formation is similar to other user categories, yet significantly different from the rest. By the time I had to label this group, I realized that I had significantly less direct observations of this user group than the other groups outlined in this dissertation. I had a close contact with the big-users, student-users, and professor-users, but my contact with the formation of the LMS developers was limited to observing their live interactions online without participating in those interactions through questions

or discussions. The term the other-user, however, is an analytical label with no semantic equivalent among the participants at my fieldsite.

One of the characteristics of the other-user group, as stated, is that the activity of its members is not necessarily under any institutional jurisdiction. Usually, this user works independently from a remote area and is joined by other developers with whom he or she shares the same interest. Interestingly, people under this category describe themselves as “cool kids” or the “cool community.” Some members used “Don Quixote”, or “Mr. Splashing pants” as individual pseudonyms. From their postings, it can be speculated that these usernames were employed on purpose for emphasizing an individual’s emotional state.

Members of this user group often used symbolic terms to describe their interpretation of the issues surrounding eLearning technologies. They would state, “patents are devils,” or would create descriptions such as “Openwashing: n., having an appearance of open-source and open-licensing for marketing purposes, while continuing proprietary practices.” A deeper analysis suggests the symbolic nature of “hate” of this group against Blackboard software. The resistance to Blackboard goes beyond any concerns with the functionality of the product; a deeper insight shows significant connections between the other-users resistance and the political actions and practices of the Blackboard corporation. The activities of this group became well organized and publicly recognized especially with their website “Boycott Blackboard” and Wikipedia entry “Previous art” that served to document the falsity of Blackboard patent later on.

Non-user

The concept of non-user is also analytical; rather than just a group of individuals that never operated Blackboard and never achieved any related skills or knowledge, in the context of this study, non-user represents the unskilling process during software updating or software migration. As already explained in Chapter 4, software updating technologically is a normal occurrence. However, from my own experiences with Blackboard, and from what I have learned during my observations, the updating has been so drastic sometimes, that user's confusion deeply affected Blackboard normal operation. Another issue is even more complicated. It has to do with what is called "data migration" during a software replacement. Beside any other properties, as an example, Blackboard software serves also as a virtual storage of all online information used for all online classes held in the platform during time. While the restoration of the data during software replacement may look as a technical issue only, the process itself requires new skills and knowledge. The issue is not whether software should update or not. The issue stands on the teaching of the new skills themselves: are the new technological skills needed, at what level, and who should teach them with no cost and stress to users. In the hierarchy of users, non-user is perhaps the most significant category that connects technology with the market and user commodification and contests the idea of learning software as "simple tools" and "user friendly".

From a Learning Signifier to a Globalization Sign

Understanding the developments of technologies in education is a necessary step in analyzing how this field is reacting to increasing pressures of globalization. The Blackboard LLC, the media, the advertising, and the Blackboard team at the University

all repeatedly called Blackboard "just a tool," "a simple tool," or "that tool." Instead, a mess behind the software became obvious and excruciating. It became essential for this study to not only emphasize the software complexity and sophistication, but also to understand the related semantics: Although the technology was described as new, the dynamics beyond its developments looked quite familiar to many people, some of whom were able to even predict certain situations and occurrences in its business trajectory.

As the observations show, Blackboard technology includes the software, work, business, organization, semantics, education, institution, philosophy, law, and much more. Trying to understand the complexity of the discourse surrounding Blackboard led me to analyze the developments of Blackboard Inc. – the producer of Blackboard software – its business plan, philosophy, and some of its public activities, including acquisitions, patents, lawsuits, and the sale of the company. By tracing this historical path, I realized that there were discrepancies between Blackboard as software, Blackboard as business, and Blackboard as publicly discussed. Blackboard was often described and discussed as a successful business with a poor product; Blackboard was characterized as a leader in the field of eLearning, a characterization that seemed to go beyond its advertising.

Following Blackboard linkages back in time, the picture of a *network* came to light and the concept of *networking* became crucial for the study. As the leaders of Blackboard's business decided to channel their business plan toward learning technologies, they worked diligently both to become part of the powerful network of EDUCAUSE and then to take an important place within network until their capitalistic

practices, as it was said, violated the values of the community beyond the network. Blackboard software, originally created by two college students, managed to become a synthesis of many freely-shared ideas and a tremendous collective work conducted by many people (educators, academics, developers, institutions, corporations, and government agencies) who involved their own effort in exchange for mutual benefits. The feedback from millions of users, who operate the platform for teaching, learning, and administrative tasks and whose ideas, concerns, and failures can be a great source of information and improvements, even though a very important part in the technological process, is almost never recognized.

The product that was designed and widely advertised as a technology that would connect millions of learners in America and across the globe became the epicenter of public attention and criticism for the capitalistic practices; this criticism became associated with the developments of the software. In the midst of those developments, the company was sold, its leadership was replaced, and its mission was shifted from the production of an educational software to a service that can help teaching and learning online. Blackboard, once a pioneer in the field of LMS, lost reputation after its leadership was accused for extending its political activity (patent, lawsuit, acquisition of other companies) based on principles that positioned the company against its own community which raised criticism and revolt as well.

The cultural mapping of Blackboard practices – from a signifier of learning to a sign of globalization – documents how the old capitalistic forms are penetrating the field of education through the Internet technologies. The data collected during this study

confirm that technology is a human affair, and the impact of technology must be understood in its complex context. As stated on Chapter 4, Chasen and Pittinsky chose the name Blackboard for their new company to symbolically emphasize the educational intent of the new technology. Similarly to a rose, the word that signifies a flower became the sign of love, Blackboard has become a signifier of globalization.

During the short lifespan of Blackboard software, the company, which started a business without any products while its main product-to-be, being built separately elsewhere, was designed to enforce capitalistic structures further into higher education. Blackboard defined its product as proprietary, yet defined itself as the LMS pioneer with some elite universities as clients; it purchased similar products to get more clients, and then discontinued those products; it demanded to patent many features of the LMSs that were developed collectively by many educators, developers, and engineers who worked together from different corners of the world; it sued similar companies for developing their own products with the same popular features; it apologized for these actions and publicly announced a pledge to not interfere with open source and home grown software; it changed its self-definition from proprietary software to a diversified portfolio including open source products and strategically attempting to trade services instead of products; it finalized its profitable strategies by purchasing two open-source partners, an act described as unprecedented that left many confused and large sections of the IT community distressed. Each of these developments highlights the capitalistic drive of Blackboard and the impact of it on learning and learners.

From a theoretical perspective, the cultural story of Blackboard documents how the developments of a new technology – one that raises hopes for strengthening collective work and facilitating freely-exchanged ideas – can be legitimately associated with some old tricks of capitalism. This time the development is in the field of education, one appraised for its collective spirit, democracy, and freedom. Paraphrasing Friedman,[104] globalization is not the answer for the developments of Blackboard technology in the field of higher education. Instead, the documentation of cultural practices within Blackboard software describes and explains what can be described as globalization in the field of education.

The story of Blackboard also proves the falsity of what can be described as a neoliberal appreciation of technology as the solution for many of the issues faced in education. This neoliberal philosophy is that not only is a technology as good as the profit associated with it, but also that technology is good only when the profit continues to increase. Otherwise, that technology will be discarded with no regrets. This opens a discussion on the second fallacy associated with what is "widely shared" about LMS technologies: that they lower the cost of tuition and give access to the so-called elite education. As the experts in the field continue to highlight, LMS technologies can come with "a bag of old tricks" to prevent a client migration from one LMS to another. With these conditions of LMS technology, it seems that there are only limited concerns about what will happen in terms of organizational culture: the human skills, knowledge, and rules already established for a smooth operation of technology. What is going to happen

[104] See his quotes on globalization on Chapter 2.

with the Dr. Gs in the world and their commitment to a better education? What does "Once upon a time, there was Blackboard…" mean to users for whom Blackboard always meant hard work, skills, and knowledge?

Fiat Lux or The Epilogue

The cultural roadmap of Blackboard is only one of many ways how commodification functions and how the market extends in the field of education. However, this extension in American higher education continues to happen through various technologies. The Massive Online Open Courses (MOOCs) is the new trend in American higher education. Starting in 2007-08 at both Utah University and the University of Regina, the MOOCs have attracted media and public attention. An Artificial Intelligence MOOC in 2012 had an enrollment of 160,000 students from all over the world. It should be noted that the MOOCs promise unlimited participation and open access via the Internet. They also promise to enhance the community of students, professors, and assistants. As in the past, it remains unclear how social learning will benefit from the MOOCs and how the so-called shared learning would benefit learner's educational achievements.[105]

More and more corporations and universities are moving toward the implementation and use of eLearning technologies. Not long time ago, a small group of professors involved in this new movement founded Coursera. Soon afterward, MIT and Harvard announced the creation of edX and their $60 million investment in the project. In

[105] After his experience teaching the Artificial Intelligence course, Professor Thrun, the instructor for the course, resigned from Stanford and created Udacity using venture capital

the summer of 2012, the University of California-Berkley announced that it was joining the edX initiative; Chancellor Robert J. Birgenau stated: "We are committed to excellence in online education with the dual goals of distributing higher education more broadly and enriching the quality of campus-based education. We share the vision of MIT and Harvard leadership and believe that collaborating with the not-for-profit model of edX is the best way to do this. Fiat Lux."[106] This ritualistic and symbolic discourse exceeds one's simple enthusiasm. Although it may be too soon to predict the future of MOOCs and these other new eLearning technologies, the surrounding discourse already hints that the fate of Blackboard software will keep replicating.

Future Trends

A future direction for anthropology of technology, education and culture would be to expand the understanding of user phenomenon including a larger range of LMSs and their respective users. To fully understand how the commodification of user takes place in the global education market it also requires a deeper understanding of open and free source LMSs such as Moodle and its users. As some of the sources shown in Chapter 4 state technically, the differences between Blackboard and Moddle are not significant to teaching or learning, then why are there differences on preferring one software over another? Also, how do the educational institutions make their own decisions when choosing or replacing LMS software? Do they consider any gains of loss on human capital (knowledge, skills, organization)? I hope that this dissertation may open more

[106] Phil Hill' article Online Educational Delivery Models: A Descriptive View. Published on 11/25/2012 http://mfeldstein.com/online-educational-delivery-models-a-descriptive-view/ Retrieved on 01/12/2014.

doors in understanding eLearning technologies in the contemporary context. Hopefully, the emphasis of collective work and organization as crucial in the developments of LMSs can help the decision-makers on where to focus their attention when evaluation software.

Appendix 1

Illustration 1: Internet users

Illustration 2: User. Support your habit.

Appendix 2

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  <host>ldap.example.com</host>
  <port>389</port>
  <securityPrincipal>cn=admin,dc=atlassian,dc=priv
  <securityCredential>secret</securityCredential>
  <securityProtocol>plain</securityProtocol>
  <securityAuthentication>simple</securityAuthen
  <baseContext>dc=atlassian,dc=private</baseCor
  <baseUserNamespace>dc=staff,dc=perftest,dc=a
  <baseGroupNamespace>dc=groups,dc=perftest,d
  <usernameAttribute>cn</usernameAttribute>
  <userSearchFilter>(objectClass=inetorgperson)</
  <firstnameAttribute>givenname</firstnameAttrib
```

Illustration 3:User as text

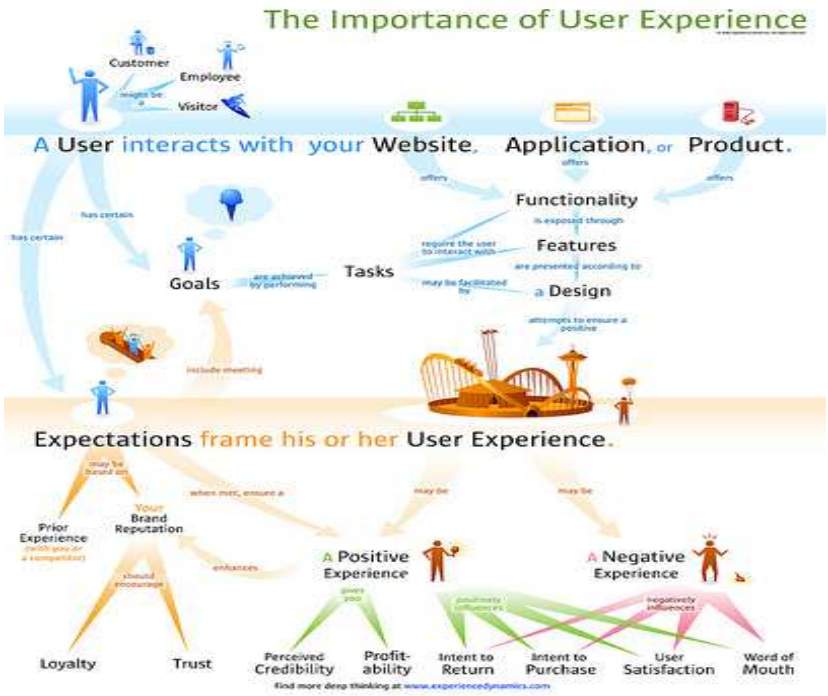

Illustration 4: User as experience

BIBLIOGRAPHY

Akrich, M., & Law, J. 1992 The de-scription of technical objects (W. E. Bijker, Ed.). *Shaping Technology, Building Society: Studies in Sociotechnical Cgange*, 205-224.

Adeoye, B., & Wentling, R. M. 2007 The relationship between national culture and the usability of an e-learning system. *International Journal on E-Learning*, pp. 119-147.

Anderson, B. R. 2006 Imagined communities: Reflections on the origin and spread of nationalism. London: Verso.

Appadurai, A. 1986 Introduction: Commodities and the politics of value. In A. Appadurai (Ed.), *The Social life of things: Commodities in cultural perspective* (pp. 3-63). Cambridge [Cambridgeshire: Cambridge University Press.

1996 *Modernity at large: Cultural dimensions of globalization* (8th ed.). Minneapolis (Minn.): University of Minnesota Press.

2002 Disjuncture and Difference in the Global Cultural Economy. In J. X. Inda & R. Rosaldo (Eds.), *The anthropology of globalization: A reader* (pp. 46-64). Malden: Blackwell.

Apple, M. W. 2000 Between Neoliberalism and Neoconservatism: Education and Conservatism in a Global Context. In N. C. Burbules & C. A. Torres (Eds.), *Globalization and education: Critical perspectives* (pp. 58-77). New York: Routledge.

Apple, M. W., Kenway, J., & Singh, M. 2005 Are Markets in Education Democratic?

Neoliberal Globalism, Vouchers, and Politics of Choice (W. Apple, Kenway, & Sings, Eds.). In *Globalizing education: Policies, pedagogies, & politics* (pp. 209-230). New York: Peter Lang.

Barfield, T. J. 1997 The dictionary of anthropology. Oxford, MA: Blackwell.

Barthes, R., & Lavers, A. 1972 *Mythologies*. New York: Hill and Wang.

Barthes, R. 1972 *Mythologies* (A. Lavers, Trans.). New York: Noonday Press.

Basalla, G. 1988 *The evolution of technology*. Cambridge [England: Cambridge University Press.

Batteau, A. 2010 *Technology and culture*. Long Grove, IL: Waveland Press.

Benedict, R. 1961 *Patterns of culture.* Boston: Houghton Mifflin.

Benkler, Y. 2003 Freedom in the Commons: Towards a Political Economy of Information. *Duke Law Journal, 52*(6), 1245-1276. Retrieved May 04, 2014, from http://www.jstor.org/stable/10.2307/1373170?ref=searchgateway:44191d07560f817c6ec809505701c3ad

2006 The Wealth of Networks: How Social Production Transforms Markets and Freedom. Retrieved May 04, 2014, from http://www.jstor.org/stable/10.2307/j.ctt1njknw?ref=searchgateway:042ec03362e50e609a08084d6d781011

2011. Networks of power, degrees of freedom. *International Journal of Communication, 5*, 721-755.

Berger, P. L., & Luckmann, T. 1967 The social construction of reality: A treatise in the sociology of knowledge. Garden City, NY: Doubleday.

Bernard, H. R., & Ryan, G. W. 2010 Analyzing qualitative data: Systematic approaches. Los Angeles: SAGE.

Bernard, H. R. 1994 Research methods in anthropology: Qualitative and quantitative approaches. Thousand Oaks, CA: Sage Publications.

Bijker, W. E. 1993 Do Not Despair: There is Life after Constructivism. *Science, Technology, and Human Values*, *18*(1), technological choices: sage publications, inc, 113-138. Retrieved April 18, 2009, from http://www.jstor.org/stable/689703

1994 Reply to Richard Hull. *Science, Technology, and Human Vales*, *19*(2), sage publications, inc, 245-246. Retrieved April 18, 2009, from http://www.jstor.org/stable/689752

Bijker, W. E., Hughes, T. P., & Pinch, T. J. 1989 The Social construction of technological systems: New directions in the sociology and history of technology. Cambridge, MA: MIT Press.

Bijker, W. E., Pinch, T. J., & Clayton, N. 2002 SCOT Answers, Other Questions: A Reply to Nick Clayton. *Technology and Culture*, *43*(2), the johns hopkins university press, 361-370. Retrieved June 26, 2009, from http://www.jstor.org/stable/25147907

Blackmore, J. 2000 Globalization: A Useful Concept for Feminists Rethinking Theory and Strategies in Education? In N. C. Burbules (Author) & C. A. Torres (Ed.), *Globalization and education: Critical perspectives* (pp. 133-155). New York: Routledge.

Blaszezyk, R. L. 1997, September. From Invention to Metaphor: Plastic and American Culture [Review of book *American Plastic: A Cultural History by Jeffrey L. Meikle*]. *American Quarterly, 49*, 640-649. Retrieved June 26, 2009, from JSOR.

Brown, L. 2005 Virtual Spaces for Innovative Pedagogical Actions: Education, Technology, and Globalization (M. W. Apple, J. Kenway, & M. Singh, Eds.). In *Globalizing education: Policies, pedagogies, & politics*(pp. 151-171). New York: Peter Lang.

Brown, S. D., & Lightfoot, G. 2002 Presence, Absence and Accountability: E-mail and the mediation of Organizational memory (S. Woolgar, Ed.). In *Virtual society?: Technology, cyberbole, reality* (pp. 209-229). Oxford: Oxford University Press.

Burbules, N. C., & Torres, C. A. 1999 Globalization and Education: An Introduction. In N. C. Burbules & C. A. Torres (Eds.), *Globalization and education: Critical perspectives* (pp. 2-26). New York: Routledge.

Burbules, N. C. 2000 Does the Internet Constitute a Global Educational Community? In N. C. Burbules & C. A. Torres (Authors), *Globalization and education: Critical perspectives* (pp. 323-355). New York: Routledge.

Burrell, J. Busch, L., & Tanaka, K. 1996. Rites of Passage: Constructing Quality in Commodity Subsector. *Science, Technology, and Human Values, 21*(1), 3-27. Retrieved July 12, 2009, from http://www.jstor.org/stable/689791

Callon, M. 1987 Society in the Making: The Study of Technology as a Tool for Sociological Analysis (W. E. Bijker, T. P. Hughes, & T. J. Pinch, Eds.). In *The*

Social construction of technological systems: New directions in the sociology and history of technology (pp. 83-106). Cambridge, MA, MA: MIT Press.

Castells, M. 2000 The rise of the network society: Rise of the network society. Oxford: Blackwell.

Clayton, N. 2002 Does it Answer? *Technology and Culture, 43*(2), the johns hopkins university press, 351-360. Retrieved June 26, 2009, from http://www.jstor.org/stable/25147906

Modelsi, G.1968 Communism and Globalization of Politcs. *International Studies Quarterly* (4th ed., Vol. 12, pp. 380-393). Blackwell Publishing. Retrieved May 11, 2010, from http://www.jstor.org/stable/3013524

Connell, R. 2007 The Northern Theory of Globalization. *Sociological Theory*, *25*(4), 368-385. doi: 10.1111/j.1467-9558.2007.00314.x

Cowan, R. S. 1999 The revolution in the home (D. A. MacKenzie & J. Wajcman, Eds.). In *The social shaping of technology* (pp. 281-300). Buckingham [Eng.: Open University Press.

Crook, C., & Light, P.2002 Virtual Society and The Cultural Practice of study (S. Woolgar, Ed.). In *Virtual society?: Technology, cyberbole, reality* (pp. 153-175). Oxford: Oxford University Press.

Culler, J. 1977 In Pursuit of Signs. *Daedalus*, *106*(4), 95-111. Retrieved from http://www.jstor.org/stable/20024510

1983 *Roland Barthes*. New York: Oxford University Press.

De la Teja, I., & Spannaus, T. W. 2008 New Online Learning Technologies: New Online Learner Competencies. In J. Visser & M. Visser-Valfrey (Eds.), *Learners in a changing learning landscape: Reflections from a dialogue on new roles and expectations* (pp. 187-212). Dordrecht: Springer.

De Man, P. 1973 Semiology and Rhetoric. *Diacritics, 3*(3), 27-33. Retrieved March 23, 2011, from http://www.jstor.org/stable/464524.

1990 Roland Barthes and he Limits of Structuralism. *Yale French Studies, 77*, 177-190. Retrieved March 23, 2011, from http://www.jstor.org/stable/2930153 .

Douglas, M. 2002 Purity and danger: An analysis of concept[s] of pollution and taboo. London: Routledge.

Downey, G. L., & Dumit, J. 1997 Cyborgs & citadels: Anthropological interventions in emerging sciences and technologies. Santa Fe, NM: School of American Research Press.

Downey, G. L. 1998 The machine in me: An anthropologist sits among computer engineers. New York: Routledge.

Durkheim, É. 1984 *The division of labor in society* (W. D. Halls, Trans.). New York: Free Press.

Edmundson, A. L. 2004 *The Cross-Cultural Dimmensions of Globalized E-Learning* (Unpublished doctoral dissertation). Walden University. doi: UMI Microfrom 3127734

Edwards, P. N. 1996 The closed world: Computers and the politics of discourse in Cold War America. Cambridge, MA: MIT Press.

Escape Vehicles: The Internet and the Automobile in a Local-Global Intersection. 2003 In N. Oudshoorn & T. J. Pinch (Eds.), *How users matter: The co-construction of users and technologies* (pp. 81-102). Cambridge, MA: MIT Press.

Escobar, A. 1994 Welcome to Cyberia. *Current Anthropology, 35*(3), 211-223.

Fang, L. M.

2006 *Through Singaporean Eyes: A Descriptive Case Study of Young Adults' E-Learning Experience* (Unpublished doctoral dissertation). George Washington University. doi: UMI Microform 3237035

Feenberg, A., & Bakardijeva, M. (Eds.). 2004 Community in the digital age: Philosophy and practice. Lanham (Md.): Rowman & Littlefield.

Friedman, J. 2002 Globalization and Localization (J. X. Inda & R. Rosaldo, Eds.). In *The anthropology of globalization: A reader* (pp. 231-246). Malden, MA: Blackwell.

(n.d.). Global Systems, Globalization, and Anthropological Theory. Manuscript.

Friedman, T. L. 1999 *The Lexus and the olive tree*. New York: Farrar, Straus, Giroux.

Foucault, Michel.1988 *Technologies of the Self*, edited by Luther H. Martin, Huck Gutmanand Patrick H. Hutton, pp. 16-49. Univ. of Massachusetts Press. http://foucault.info/documents/foucault.technologiesofself.en.html Retrieved on 09/14/2013

Fuchs, S., & Ward, S. 1984 What is Deconstruction, and Where, and When does it Take Place? Making Facts in Science, Building Case in Law. *American Sociological Review, 59*(4), 481-500. Retrieved March 23, 2011, from http://www.jstor.org/stable/2095926

Gaudilliere, J. 2006 Science, Technology, and Globalization: Globalization and Regulation in the Biotech World: The Transatlantic Debates over Cancer Genes and Genetically Modified Crops. *Osiris: Global Power Knowledge Science Technology in International Affairs, 21*(1), 251-272. Retrieved February 23, 2011, from http://www.jstor.org/stable/10.1086/507144

Geertz, C. 1973 The Interpretation of Cultures. New York: Basic Books.

Gennep, A. V. 1960 *The rites of passage.* [Chicago]: University of Chicago Press.

Georg Wilhelm Friedrich Hegel (Stanford Encyclopedia of Philosophy). (1997, February 13). Retrieved July 29, 2010, from http://plato.stanford.edu/entries/hegel/

Levit, T.1983 The Globalization of Markets. *Harvard Business Review* (pp. 92-102). Unk: Unk.

Godelier, M. 1999 *The enigma of the gift*. Cambridge: Polity Press.

Grint, K., & Woolgar, S. 1995 On Some Failures of Nerve in Constructivist and Feminist Analysis of Technology. *Science, Technology, and Human Values, 20*(3), feminist and constructivist perspectives on new technology, 286-310. Retrieved June 25, 2009, from http://www.jstor.org/stable/690017

1997 *The machine at work*. Cambridge: Polity Press.

Hakken, D. 1999 Cyborgs@cyberspace?: An ethnographer looks to the future. New York: Routledge.

2003 The knowledge landscapes of cyberspace. New York: Routledge.

Hamilton, D., Dahlgren, E., Hult, A., Ross, B., & Soderstrom, T. 2004 When Performance Is the Product: Problems in the Analysis of Online Distance Education. *British Educational Research Journal, 30*(6), Taylor & Francis, ltd, 841-854. Retrieved July 06, 2009, from http://www.jstor.org/stable/1502245

Harvey, D. 1990 The condition of postmodernity: An enquiry into the origins of cultural change. Cambridge, MA: Blackwell.

2005 *A brief history of neoliberalism*. Oxford: Oxford University Press.

Held, B. D. (n.d.). The Global Transformations Website. Retrieved March 16, 2011, from http://www.polity.co.uk/global/default.asp

Higgins, V. 2007 Performing Users: The Case of a Computer-Based Dairy Decision-Support System. *Science, Technology & Human Values, 32*(3), 263-286. doi: 10.1177/0162243906298350

Hine, C. 2003 *Virtual ethnography*. London: SAGE.

Hofman, J. 1999 Writers, texts and writing acts: Gendered user images in word. In D. A. MacKenzie & J. Wajcman (Eds.), *The social shaping of technology* (pp. 222-243). Buckingham [Eng.: Open University Press.

Hughes, C., & Tight, M. 1995 The Myth of the Learning Society. *British Journal of Educational Research, 43,* 3rd ser., 290-304. doi: http://www.jstor.org/stable/3121985

1986 The Seamless Web: Technology, Science, Etcetera, Etcetera. *Social Studies of Science, 16*(2), sage publications, ltd, 281-292. Retrieved July 12, 2009, from http://www.jstor.org/stable/285206

1989 The Evolution of Large Technological Systems (W. E. Bijker, T. P. Hughes, & T. Pinch, Eds.). In *The Social Construction of Large Technological Systems* (pp. 51-82). MIT Press.

2004 *Human-Built World How to think about Technology and Culture*. Retrieved July, 2010, from The University of Chicago Press

Hull, R. 1994 The (Re)Turn to History: A Comment on Wiebe E. Bijker, "Do Not Despair: There is Life after Constructivism" *Science, Technology, and Human Values, 19*(2), sage publications, inc, 242-244. Retrieved April 18, 2009, from http://www.jstor.org/stable/689751

Inda, J. X., & Rosaldo, R. 2002 A World in Motion. In J. X. Inda & R. Rosaldo (Eds.), *The anthropology of globalization: A reader* (pp. 1-34). Malden, MA: Blackwell.

Inhorn, M. C. 2003 Local babies, global science: Gender, religion, and in vitro fertilization in Egypt. New York, N.Y: Routledge.

Jordan, A. 2003 *Business anthropology*. Prospect Heights, IL: Waveland.

Joseph, M. 2002 *Against the romance of community*. Minneapolis: University of Minnesota Press.

Kellner, D. 2002 Theorizing Globalization. *Sociological Theory, 20*(3), 285-305. doi: 10.1111/0735-2751.00165

Kern, S. 2003. *The culture of time and space: 1880 - 1918*. Cambridge, Mass. [u.a.: Harvard Univ. Press.

Kien, G. 2009. Global Technography: Ethnography in the age of mobility. New York: Peter Lang.

Klein, H. K., & Kleinman, D. L. 2002. The Social Construction of Technology: Structural Considerations. *Science, Technology, and Human Values, 27*(1), sage publications, inc, 28-52. Retrieved April 18, 2009, from http://www.jstor.org/stable/690274

Kline, R., & Pinsh, T.1999. The Social Construction of Technology (D. A. MacKenzie & J. Wajcman, Eds.). In *The social shaping of technology* (pp. 113-115). Buckingham [Eng.: Open University Press.

Kline, R. 2003. Resisting Consumer Technology in Rural America: The Telephone and the Electrification (N. Oudshoorn & T. J. Pinch, Eds.). In *How users matter: The co-construction of users and technologies* (pp. 51-66). Cambridge, MA: MIT Press.

1977, December. The Organizational Context of User-Centered Software Designs. *MIS Quarterly*, *1*(4), 41-52. Retrieved June 25, 2009, from http://www.jstor.org/stable/249021

Knight, D. (Ed.). 2000 Critical Essays on Roland Barthes. New York: G.K.Hall.

Koppytoff, I. 1986 The Cultural Biography of things: Commoditization as process (A. Appadurai, Ed.). In *The Social life of things: Commodities in cultural perspective* (pp. 64-94). Cambridge [Cambridgeshire, NY: Cambridge University Press.

Latour, B., & Woolgar, S. 1985Laboratory life: The construction of scientific facts. [Princeton]: Princeton.

Latour, B. 1993 *We have never been modern*. Cambridge, MA: Harvard University Press.

2007 Reassembling the Social: An Introduction to Actor-Network-Theory. Oxford: Oxford University Press.

Law, J., & Singleton, V. 2000 Performing Technological Stories: On Social Construction, Performance, and Performativity. *Technology and Culture, 41*(4), 765-775. Retrieved June 26, 2009, from http://www.jstor.org/stable/25147597

Law, J. 1989 Technology and Heterogeneous Engineering: The Case of Portuguese Expansion. In W. E. Bijker, T. P. Hughes, & T. J. Pinch (Eds.), *The Social construction of technological systems: New directions in the sociology and history of technology* (pp. 111-134). Cambridge, MA: MIT Press.

Levitt, T. 1983, May/June The Globalization of Markets. *Harvard Business Review*, 92-102.

Lewellen, T. C. 2002 The anthropology of globalization: Cultural anthropology enters the 21st century. Westport, CT: Bergin & Garvey.

Lincoln, B. 1989 Discourse and the construction of society: Comparative studies of myth, ritual, and classification. New York: Oxford University Press.

Lindsay, C. 2003 From the Shadow: Users as Designers, Producers, Marketers, Distributors, and Technical Support. In N. Oudshoorn & T. J. Pinch (Eds.), *How users matter: The co-construction of users and technologies* (pp. 29-50). Cambridge, MA: MIT Press.

Luborsky, M., & Sankar, A. 2006 Cultural Forces in the Acceptance of Qualitative Research: Advancing Mixed Method Research. In L. Curry, R. R. Shield, & T. T. Wetle (Eds.), *Improving aging and public health research: Qualitative and mixed methods* (pp. 27-37). Washington, DC: American Public Health Association.

Luborsky, M. R., & Rubinstein, R. L. 1995 Sampling in Qualitative Research. *Research On Aging, 17*(1), 89-113.

Lévy, P., & Bononno, R. 2001 *Cyberculture*. Minneapolis, MN: University of Minnesota Press.

Mackay, H., Carne, C., Beynon-Davies, P., & Tudhope, D. 2000 Reconfiguring the User:: Using Rapid Application Development. *Social Studies of Science, 30*(5), 737-757. doi: 10.1177/030631200030005004

MacKenzie, D. A., & Wajcman, J. 1999 Introductory essay: The social shaping of technology (D. A. MacKenzie & J. Wajcman, Eds.). In *The social shaping of technology* (pp. 3-27). Buckingham [Eng.: Open University Press.

Marcelo, C., & Perera, V. H. 2006 Sequences of discourse in e-learning environments. *Academic Exchange Quarterly*, 268-274.

Marx, K.1985 Capital. (London): Penguin Books.

Mauss, M. 1990 The gift: The form and reason for exchange in archaic societies. New York: W.W. Norton.

Meadows, P. 1951 Culture Theory and Industrial Analysis. *The ANNALS of the American Academy of*

Meikle, J. L. 1995 *American plastic: A cultural history*. New Brunswick, NJ: Rutgers University Press.

Miller, D., & Slater, D. 2003 The Internet: An ethnographic approach. Oxford [u.a.: Berg.

Monahan, T. 2005 Globalization, technological change, and public education. New York: Routledge.

Navarro, P. 2000 Economics in the Cyberclassroom. *The Journal of Economic Perspectives, 14*(2), American economic association, 119-132. Retrieved July 26, 2009, from http://www.jstor.org/stable

Nixon, H. 2005 Cultural Pedagogies of Technology (M. W. Apple, J. Kenway, & M. Singh, Eds.). In *Globalizing education: Policies, pedagogies, & politics* (pp. 32-45). New York: Peter Lang.

Noble, D. F. 2001 Digital diploma mills: The automation of higher education. New York: Monthly Review Press.

2005 Beyond the promised land: The movement and the myth. Toronto, Ont.: Between the Lines.

Noe, M. (n.d.). Litcrit or litlit? | Style | Find Articles at BNET. Retrieved March 05, 2011, from http://findarticles.com/p/articles/mi_m2342/is_4_35/ai_97114242/

Nozick, R. 1989 The examined life: Philosophical meditations. New York: Simon and Schuster.

Ong, A., & Collier, S. J. 2005 Global assemblages: Technology, politics, and ethics as anthropological problems. Malden, MA: Blackwell Pub.

Ortner, S. B. 1972 Is Female to Male as Nature Is to Culture? *Feminist Studies, 1*(2), feminist studies, inc, 5-31. Retrieved April 29, 2009, from http://www.jstor.org/stable/3177638

1973 On Key Symbols. *American Anthropologist, 75*(5), 1338-1346. Retrieved April 29, 2009, from JSTOR.

Oudshoorn, N., & Pinch, T. J. 2005 How users matter: The co-construction of users and technology. Cambridge, MA: MIT.

Oudshoorn, N., Rommes, E., & Stienstra, M. 2004 Configuring the User as Everybody: Gender and Design Cultures in Information and Communication Technologies. *Science, Technology, & Human Values, 29*(1), 30-63. doi: 10.1177/0162243903259190

Partridge, W. L. 1973 The hippie ghetto: The natural history of a subculture. New York, NY: Holt, Rinehart and Winston.

Paulson, K. 2002, January/February Reconfiguring Faculty Roles for Virtual Settings. *The Journal of Higher Education, 73*(1), 123-140. doi: 10.1353/jhe.2002.0010

Paulson, K. 2002 Reconfiguring Faculty Roles for Virtual Settings. *The Journal of Higher Education, 73*(1), the faculty in the new millennium, 123-140. Retrieved June 26, 2009, from http://www.jstor.org/stable/00221546

Petrina, S. 2002 Getting a Purchase on "The School of Tomorrow" and its Constituent Commodities: Histories and Historiographies of Technologies. *History of*

Education Quarterly, 42(1), 75-111. Retrieved June 25, 2009, from http://www.jstor.org/stable/00182680

Pfaffenberger, B. 1988a Fetishised Objects and Humanised Nature: Towards an Anthropology of Technology. *Man, 23*(2), royal anthropological institute of Great Britain and Ireland, 236-252. Retrieved June 26, 2009, from http://www.jstor.org/stable/2802804

1988b The Social Meaning of the Personal Computer: Or, Why the Personal Computer Revolution Was no Revolution. *Anthropological Quarterly, 61*(1), the George Washington University Institute for Ethnographic Research, 39-47. Retrieved July 24, 2009, from http://www.jstor.org/stable/3317870

1992a Social Anthropology of Technology. *Annual Review Anthropology*. Retrieved from http://www.jstor.org/stable

1992b Technological Dramas. *Science, Technology*(& Human Values, Vol. 17, No. 3), 282-312. http://www.jstor.org/stable/10.2307/690096?ref=search-gateway:d34824b5af66cf40a7bce65fa75bdad6 Retrieved on May 04/2014.

Pinch, T., & Bijker, W. 1986 Science, Relativism, and the New Sociology of Technology: Reply to Russell. *Social Studies of Science, 16*(2), 347-360. Retrieved April 18, 2009, from http://www.jstor.org/stable/285211

Pinch, T. 1993 Turn, Turn, and Turn again: The Woolgar Formula. *Science, Technology, and Human Values, 18*(4), sage publications, inc, 511-522. Retrieved June 25, 2009, from http://www.jstor.org/stable/690007

Pinch, T. J., & Bijker, W. E. 1984 The social construction of Facts and Artifacts. *Social Studies of Science, 14*(3), 399-441. doi: 285335

Pinch, T. J. 1992 Opening Black Boxes: Science, Technology, and Society. *Social Studies of Science, 22*(3), sage publications, ltd, 487-510. Retrieved July 12, 2009, from http://www.jstor.org/stable/370279

Psenka, C. E. 2008 A Monumental task: Translating Complex Knowledge in NASA's Space Human Space Flight Network (Unpublished doctoral dissertation). Wayne State University.

Raduntz, H. 2005 The Marketization of Education (M. W. Apple, J. Kenway, & M. Singh, Eds.). In *Globalizing education: Policies, pedagogies, & politics* (pp. 210-231). New York: Peter Lang.

Rheingold, H. 2000 The virtual community: Homesteading on the electronic frontier. Cambridge, MA: MIT Press.

Robertson, R. 1992 Globalization: Social theory and global culture. London: Sage.

Robinson, W. I. 2004 A theory of global capitalism: Production, class, and state in a transnational world. Baltimore: Johns Hopkins University Press.

Rosen, P. 1993 The Social Construction of Mountain Bikes: Technology and Postmodernity in the Cycle Industry. *Social Studies of Science, 23*(3), 479-513. doi: 10.1177/030631279302300300 3

Rosenzweig, R. 1998 Wizards, Bureaucrats, Warriors, and Hackers: Writing the History of the Internet. *The American Historical Review, 103*(5), 1530-1552. doi: 10.2307/2649970

Russell, S. 1984 *A Social Construction of Artefacts: A response to*. Retrieved June 24, 2009, from Wayne State University library.

Scheper-Hughes, N. 2006 The Global Traffic in Human Organs (J. X. Inda & R. Rosaldo, Eds.). In *The anthropology of globalization: A reader* (pp. 270-310). Malden, Mass. [u.a.: Blackwell.

Sharp, L. 1952 Steel Axes for Age-Stone Australians. *Human Organization, 1*. Retrieved from Unk.

Sismondo, S. 1993 Some Social Constructions. *Social Studies of Science, 23*(3), 515-553. Retrieved January 04, 2010, from http://www.jstor.org/stable/370258

Smith, G. G., & Kurthen, H. 2007 Front-stage and back-stage in hybrid e-learning face-to-face courses. *International Journal on E-Learning, 6*(13), 455-475.

Spindler, G. D., & Spindler, L. 1997 Cultural Process and Ethnography (G. D. Spindler, Ed.). In *Education and cultural process: Anthropological approaches* (pp. 56-76). Prospect Heights, IL: Waveland Press.

Spindler, G. D. 1997 Ethnography: An Anthropological View. In G. D. Spindler (Au), *Education and cultural process: Anthropological approaches* (pp. 50-55). Prospect Heights, IL: Waveland Press.

Spradley, J. P. 1980 *Participant observation*. New York, NY: Holt, Rinehart and Winston.

Teli, M., Pissano, F., & Hakken, D. 2007, September The Internet as a Library-of-People: For a Cyberethnography of Online Groups. Retrieved March 29, 2010.

Tomlinson, J. 1999 *Globalization and Culture*. Chicago: The University of Chicago Press.

Torres, C. A., & Morrow, R. A. 2000 The State, Globalization, and Educational Policy. In N. C. Burbules & C. A. Torres (Eds.), *Globalization and education: Critical perspectives* (pp. 28-56). New York: Routledge.

Tsing, A. 2002 The Global Situation (J. X. Inda & R. Rosaldo, Eds.). In *The anthropology of globalization: A reader* (pp. 453-485). Malden, MA: Blackwell..

Tu, C. 2004 Online collaborative learning communities: Twenty-one designs to building an online collaborative learning community. Westport, CT: Libraries Unlimited.

Turkle, S. 1997 Life on the screen: Identity in the age of the Internet. New York, NY: Touchstone.

Turner, V., & Abrahams, R. D. 2008 The ritual process: Structure and anti-structure. New York, NJ: Aldine Transaction.

Turner, V. W. 1974 Dramas, fields, and metaphors: Symbolic action in human society. Ithaca: Cornell University Press.

2002 The forest of symbols: Aspects of Ndembu ritual. Ithaca, NY [u.a.: Cornell Univ. Press.

Van, M. J. 1988 *Tales of the field: On writing ethnography*. Chicago: University of Chicago Press.

Wach, H. M. 2002 How I Arrived on the Web. *The History Teacher, 36*(1), society for the history of education, 75-88. Retrieved July 28/, 2009, from http://www.jstor.org/stable00182745

Wajcman, J. 2000 Reflections on Gender and Technology Studies: In What State is the Art? *Scoial Studies of Science, 30*(3), sage publications, ltd, 447-464. Retrieved June 26, 2009, from http://www.jstor.org/stable/285810

Wallerstein, I. M.

2004 *The uncertainties of knowledge*. Philadelphia: Temple University Press.

2004 World-systems analysis: An introduction. Durham: Duke University Press.

Warschauer, M.

1998, March Online Learning in Sociocultural Context. *Anthropology and Education Quarterly, 19*(1), 68-88. Retrieved October 10, 2010, from http://www.jstor.org/stable/3196102

Waytt, S. 2003 *How users matter: The co-construction of users and technologies* (pp. 67-80) (N. Oudshoorn & T. J. Pinch, Eds.). Cambridge, MA: MIT Press.

Waytt, S., Thomas, G., & Terranova, T. 2002 They came, they surfed, they went back to the beach: Conceptualizing Use and Non-Use of the Internet. In S. Woolgar (Ed.), *Virtual society?: Technology, cyberhole, reality* (pp. 23-40). Oxford: Oxford University Press.

Wenger, E.

1998 Communities of practice: Learning, meaning, and identity. Cambridge, U.K.: Cambridge University Press.

Wilkie, A., & Michael, M. 2009 Expectation and Mobilisation: Enacting Future Users. *Science, Technology & Human Values, 34*(4), 502-522. doi: 10.1177/0162243908329188

Winner, L. 1980 Do Artifacts Have Politics? *Daedalus, 109*(1), 121-136. Retrieved September 12, 2010, from http://www.jstor.org/stable/20024652Accessed:

1993 Upon Opening the Black Box and Finding it Empty: Social Constructivism and the Philosophy of Technology. *Science, Technology, and Human Values, 18*(3), 362-378. Retrieved June 20, 2009, from http://www.jstor.org/stable/689726

Wittel, A. 2012 *Digital Marx: Toward a Political Economy of Distributed Media*. Retrieved October 08, 2013, from http://www.ntu.ac.uk/apps/Profiles/70220-2-2/Dr_Andreas_Wittel.aspx

Wolcott, H. F. 1997 The Teacher as an Enemy (G. D. Spindler, Ed.). In *Education and cultural process: Anthropological approaches* (pp. 76-92). Prospect Heights, IL: Waveland Press.

2001 *Writing up qualitative research*. Thousand Oaks, CA: Sage Publications.

Woolgar, S., & Cooper, G. 1999 Do Artefacts Have Ambivalence? Moses' Bridges, Winner's Bridges and Other Urban Legends in S&TS. *Social Studies of Science, 29*(3), sage publications, ltd, 433-449. Retrieved June 25, 2009, from http://www.jstor.org/stable/285412

Woolgar, S., & Grint, K. 1991 Computers and the Transformation of Social Analysis. *Science, Technology, and Human Values, 16*(3), 368-378. Retrieved June 25, 2009, from http://www.jstor.org/stable/689920

Woolgar, S. 1991 The Turn to Technology in Social Studies of Science. *Science, Technology, and Human Values, 16*(1), sage publications, inc, 20-50. Retrieved June 25, 2009, from http://www.jstor.org/stable/690038

1993 What's at Stake in the Sociology of Technology? A Reply to Pinch and Winner. *Science, Technology, and Human Values, 18*(4), sage publications, inc, 523-529. Retrieved June 25, 2009, from http://www.jstor.org/stable/690008

2002 Five Rules of Virtuality. In S. Woolgar (Ed.), *Virtual society?: Technology, cyberbole, reality* (pp. 1-22). Oxford, England: Oxford University Press.

ABSTRACT

NETWORKS OF USERS AND POWERS: BLACKBOARD SOFTWARE ROADMAP AS CULTURAL PRACTICE

by

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With the rapid growth of eLearning applications – the software providing for learning through the Internet – it has become commonplace to describe those technologies as both simple tools and user-friendly. These two vague yet suggestive terms make the operating of the technology appear as social value and any related issues as a user's problem. Interested neo-liberal groups take a step further when considering eLearning technologies as the solution for the problems faced in the field. STS studies recognize that technology fetishism is strategically employed to justify the latest developments of capitalism as technological and logical.

This doctoral study examines the complexity of the LMS software, a widely used platform in higher education, from a learner's perspective by both problematizing the term user and highlighting the systemic nature of user's issues. Becoming an LMS user is viewed as a social process of sense-making in which the system is transformed to the point that learner feels in a personal relationship with the system. The surrounding fetishistic discourse represents a capitalistic philosophy not only associated with the

industrial production of software but also aimed at the commodification of learner, contradicting the social image/function of education.

This study draws mainly from an ethnographic data collection on the experiences and perspectives of a team in charge of updating and troubleshooting Blackboard software in an American higher education setting during the 2012-13 school year, from a selection of hundreds of Internet related documents, and from my personal experience with online teaching. The study first outlines the origin and historical rise and expansion of LMS technologies; it describes how the system was socially reconstructed for fitting technology and situating learner within consumer structures; and it explains the social processes through which a learner becomes a Blackboard user. By using Blackboard as a case study, this dissertation attempts to narrow the gap between similar studies in education that often take technology/user for granted and the valuable insights achieved by STS studies in surrounding areas to LMS.

AUTOBIOGRAPHICAL STATEMENT

Diana Gellci is a native of Albania where she grew up, went to college, and began a professional career. Spending her youth in a small town, she had a simple life among good people, good books, and a lot of snow. Diana's special interest in human diversity and social justice developed early in life mostly as an impact of some of the world masterpieces she read as a child, a bi-cultural family, and a physical disability she was born with. These affected Diana's decision to give up her previous banking education and career (she holds a bachelor's degree in Economics from the University of Tirana, Albania) when she arrived in the United States. After learning English, she decided to become an anthropologist, an endeavor she enjoys and which she will never regret.

Diana received her Master's degree in Cultural Anthropology from Wayne State University in Detroit, Michigan. Diana considers Anthropology a social tool for understanding reality and offering solutions. It is along with this path that education became the application field of her anthropological knowledge and skills; eLearning technologies became a future field of exploration for her. Before completing her Ph.D. program at Wayne State, Diana also completed a graduate program in Online Teaching at the College of Education within the same university.

Diana Gellci is an Anthropology instructor and bi-lingual author. In 2012 she was rewarded with Albanian Excellence, an award given to the most successful Albanians abroad. Diana lives in Grosse Pointe, Michigan with her husband Thomas, her two children Kris and Klara, and her father Dr. Sotir Milo.