From Alien to Domestic? Virtual Learning Environment Use from a Domestication Perspective

¿Del Extranjero a Nacional? Uso del Entorno Virtual de Aprendizaje desde una Perspectiva Doméstica

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Abstract

This article proposes to use the concept of domestication as an analytic tool to understand patterns of use of a Virtual Learning Environment (VLE) and user attitudes towards VLEs. The data gathered includes semi-structured interviews with students and members of staff enrolled in or involved with a distance-learning bachelor program at a Scandinavian institution of Higher Education. The analysis highlights the role played by VLEs in shaping the students' and lecturers' routines and use of time as regards to lecture preparations, assignment writing, and discussions. It also identifies challenges related to the integration of the VLE with other related systems and sheds light on the nature of the various social processes that take place through and around the VLE.

Keywords: Virtual learning environments, domestication model, appropriation of technology, conversion, Higher Education.

Resumen

Este artículo propone utilizar el concepto de domesticación como una herramienta analítica para comprender los patrones de uso de un Entorno Virtual de Aprendizaje (VLE) y la actitud del usuario hacia VLE. Los datos recogidos incluyen entrevistas semi-estructuradas con los alumnos y miembros del personal inscritos o que participan en un programa de licenciatura de educación a distancia, en una institución escandinava de educación superior. El análisis resalta el papel desempeñado por la VLE en la formación de rutinas y el uso del tiempo de alumnos y profesores, en lo que respecta a los preparativos de conferencias, tarea escritas, y debates. También identifica los desafíos relacionados con la integración de los entornos virtuales de aprendizaje (VLE) con otros sistemas relacionados, y clarifica la naturaleza de los diversos procesos sociales que tienen lugar a través y alrededor de VLE.

Palabras clave: entornos de aprendizaje virtual, modelo de domesticación, apropiación de la tecnología, conversión, educación superior.

Background of the Study

The last decade has seen an escalation in the use of virtual learning environments (VLEs) at all levels of the educational system. As with many other technology-based educational tools, the degree of use and the level of acceptance of VLEs vary significantly from one institution to another, and also from one unit to another within the same institution. As with other technological systems, users of VLEs are rarely a homogeneous mass, but rather a constellation of individuals with different and sometimes conflicting motivations and aspirations. This article aims to examine how VLEs and VLE tools become integrated into the lives of students and staff members of a particular distance learning program. The "domestication model" is used as the main analytical tool to identify the various dimensions in the processes of making the VLE "one's own", not only as a teaching tool or as a platform for learning, but also as an important element of one's personal and social life.

The article is structured as follows. It first provides a brief overview of the VLE and the university program that form the basis for the empirical part of the research. It then describes briefly the method used to

gather the data and provide a short review of the literature on the use of distance learning technologies and user attitudes towards those. After an introduction of the model of domestication, the empirical data is analyzed from a domestication perspective. A summary of the findings and suggestions for future research conclude the article.

Main Features of the VLE

The empirical investigation that forms the basis of this article consists of a case study of a part-time university bachelor program in social work at a Scandinavian institution of Higher Education. This four-year program includes four one-week gatherings on campus each year, in addition to one full semester on campus. However, most of the learning activities are carried out between those gatherings through the use of a commercial VLE - called Tetra in this article in order to preserve anonymity.

Tetra plays a central role as a learning platform for the program, being the main communication hub between the university and the students. In addition to being the principal vehicle for conveying administrative and course information to students, Tetra is used to support a range of compulsory student activities. In particular, it offers online discussion boards and chat facilities that are meant to support the students' group work activities. The course lecturers create each year two asynchronous discussion forums on Tetra: a "social forum", intended primarily for discussions between fellow students, and an "academic forum" that is visited by the course lecturers on a regular basis, and where the students can expect their posts to be read and answered both by fellow students and by members of the faculty. Another Tetra functionality that is central for the course is the assignment hand-in tool, which allows students to submit their written work online and get feedback from both lecturers and co-students.

Use of Learning Technologies in Distance Education

There is a wealth of literature on the role played by learning technologies on the learning processes of distance students. Some works have focused on the students' learning experience with particular aspects of online learning such as, for example, video tutorials (DeVaney, 2009; Rose, 2009), online peer assessment (Chen, Wei, Wu, & Uden, 2009), wikis (Davie & Berlach, 2010; Deters, Cuthrell & Stapleton, 2010), social networking (English & Duncan-Howell, 2008) or immersive environments (Menneke & Hassall, 2008). Others have examined issues related to online learning processes, for instance what factors might facilitate online students' critical thinking (Bullen, 1998) or to what extent distance learning supports surface and deep learning (Offir, Lev & Bezalel, 2008).

Issues of isolation and loneliness are recurrent in the literature on distance education (Venter, 2003; Bambara, Harbour, Davies & Athey, 2009; Kurtz, Amichai-Hamburger & Kantor, 2009). For example, Venter (2003) describes isolation in a distance learning setting as including two elements: a sense of not getting enough feedback from teachers and a feeling of not really being part of a learning community. A number of studies have examined the role of technology in reinforcing or reducing feelings of isolation and alienation among spatially distant learners. Some works investigate strategies for increasing online student motivation, for example sending motivational mass email messages (Huett, Kalinowski, Moller & Huett, 2008; Kim & Keller, 2008), or encouraging learners to foster a sense of community among them (Dickey, 2004; Sadera, Robertson, Song & Midon, 2009). Others examine the role of attributes such as technical skills (Koroghlanian & Brinkerhoff, 2007-08) in the students' attitude toward online learning.

Over the past few years, there has been a closer focus on understanding the broader experience of designing, teaching and studying in a distance education setting. Some works concentrate on the ways in which education has changed as a result of online learning (Harasim, 2005), while others investigate student attitude and use of distance education technologies (Owens, Hardcastle & Richardson, 2009). Issues of identity have also raised some concern, for distance learners are typically involved in more non-academic activities than on-campus students. In particular, work and family have been identified as social roles that may compete with that of being a student and may contribute to relegating the distance learner's student status to the background (Venter, 2003; Chapman & Pyvis, 2005). The literature on online education has also addressed issues related to the changing role and competencies of teachers and instructors (Briggs, 2005), and the particular work environment of online academics, for example in terms of workload (Visser, 2009; Lenz, Jones & Monaghan, 2005).

Studies that focus specifically on the integration of VLEs in the lives of their users are relatively few, and those that do rarely make use of a single conceptual model. It may therefore be interesting to try out a broad conceptual framework that would allow for a structured investigation both of user perceptions and attitudes towards a learning technology and of their actual patterns of technology use. Such a model would allow an investigation of technology use not only in terms of learning, but also in terms of the

broader consequences that such technology may have on the lives of their users, both learners and instructors.

Domestication of Technologies: A Conceptual Model

The terms "domesticating" and "domestication" are commonly used to denote the transformative processes that occur when a vegetable or an animal is brought into the realm of domestic life, and is adapted or tamed in such a way that it becomes fit or advantageous to humans. However, the meaning of the terms has been stretched to include the "taming" of "foreign" objects, especially technologies, as they enter new spheres, in particular the domestic sphere (Silverstone, Hirsch & Morley, 1992; Lie & Sørensen, 1996; Mansell & Silvestone, 1996; Mackay, 1997; Habib & Cornford, 2002).

The concept of domestication emerged as an alternative to more mechanistic and rationalistic explanations of how innovations are adopted by individuals and institutions, such as the theory of diffusion of innovations, popularized in particular by Rogers (1962). In contrast with diffusionist theories, which typically have a "pro-innovation bias" (as pinpointed by McMaster & Wastell (2005)), a domestication approach does not consider new artifacts or technologies as the embodiment of progress. Instead, it proposes to seriously address the question of how and to what extent such artifacts are considered fit or made fit for integration into the lives of their users.

A domestication perspective allows for a rich analysis of the complex processes and dynamics that take place when a new artifact enters the sphere of daily use (Sørensen, 2006). The original domestication model, as developed by Roger Silverstone and colleagues (Silverstone & Haddon, 1996; Silverstone & Hirsch, 1992; Silverstone et al., 1992) was meant to provide a framework for analysis of the uptake of information and communication technologies (ICTs) in the domestic sphere. This framework was to facilitate the process of making sense of the relationships between domestic technologies and their users (or non-users) within the realm of the private sphere. Special attention was given to issues regarding the integration or non-integration of ICTs into family routines and habits. The domestication model allowed for an exploration of how ICTs become embedded in the complex texture of family life and how they might contribute to creating or exacerbating tensions or conflicts within a household (Haddon, 1992).

As time went by and so-called "domestic" technologies evolved, becoming increasingly mobile and ubiquitous, studies of domestication began to also encompass processes that accompany the uptake and integration of technologies that pervade both the private and the public sphere (Morley, 2006; Sørensen, Aune, & Hatling, 2001; Haddon, 1992). The domestication perspective also found resonance in studies of technologies in the workplace (Pierson, 2006) and in studies of wireless technology on campus (Vuojärvi, Isomäki & Hynes, 2010).

It has to be underlined that no definite or unified "domestication model" can be found in the literature. The early framework proposed by Silverstone et al. (1992) has been expanded and modified over the years, in efforts to adapt it to new study objects. Nevertheless, a number of core concepts or dimensions are recurrent in the literature on domestication and may be considered as forming the backbone of the domestication model. Because those concepts are analytical tools that are meant to facilitate the process of making sense of real-life phenomena, they tend to be fluid rather than clear-cut categories, with a degree of overlapping.

A first dimension of domestication, referred to as commodification (Silverstone et al., 1992), encompasses the various activities that transform new or unfamiliar commodities into objects that have the potential to arise interest in the mind of their potential users. This dimension may also be referred to as mental construction.

A second dimension of domestication, appropriation, refers to the actual integration of the technological artifact in its users' lives and routines. Silverstone et al.'s model (1992) suggested two sub-dimensions of appropriation: objectification, i.e. the physical integration of the artifact in the domestic (or non-domestic) landscape, and incorporation, i.e. the integration of new activities and social practices with and around the new artifact into the temporal dimension of daily life. Other sub-dimensions have been proposed, for example customization (Habib, 2003; 2005), which refers to the situations where users modify the artifact in order to adapt it more closely to their needs.

Domestication is also described as having a third dimension, conversion (Silverstone et al., 1992), which encompasses the activities and discourses that users develop in order to signal to others their participation in the process of consumption or usage of the artifact, for example by exhibiting the artifact physically or symbolically, mentioning it in conversations with others, or demonstrating user skills.

Methodological Approach

The methodological approach used for this research can be described as broadly interpretative. The main data collection activity consisted of a series of semi-structured interviews with the main stakeholders for this bachelor program.

Three main groups of stakeholders were identified, namely students, lecturers and administrative staff members, and carried out interviews with representatives from each group. Altogether, four focus group interviews and one individual interview were carried out, with a total of twenty interviewees, more precisely four staff members and sixteen students from two different classes. The purpose of the interviews was to get insights into the subjective experiences of the interviewees. One of the specificities of focus-group interviews is that they allow for the generation of data on the basis of the dynamics of a group (Rabiee, 2004). The interaction between interviewees plays therefore a central role in the creation and shaping of the data and brings in new dimensions that may not have been brought to light if the interviewees had solely responded to the investigator's questions within the realm of an individual interview.

The questions asked during the interviews were open-ended, and covered a number of topics related to past and current use of technology in general and of the VLE in particular. Issues of teaching and learning were addressed mostly with regards to VLE use. In particular, interviewees were asked to express their opinion regarding the user-friendliness and appropriateness of various VLE tools used as part of the course.

Domesticating a VLE: Insights From The Data

The VLE as a mental construct

Data from the case study point towards the existence of a variety of images or mental constructs when users articulate what Tetra is or means to them. Different students have very different learning experiences with Tetra, and their a priori understanding of the system may play a decisive role into how those learning experiences are shaped. Also, staff members react differently to the attributes and idiosyncrasies of the system and voice different opinions as to the appropriateness of making Tetra a central communication platform within the realm of the bachelor program.

One of the most thought-provoking findings from the data is that some of the students report having experienced various degrees of anxiety in their encounters with the VLE. For example, the Tetra system makes it possible for users to create their own chatrooms, but several students describe the process of creating chatrooms as convoluted and off-putting. One student interviewee expresses her reluctance to relate to the tool as follows:

> Student: [...] I miss the possibility to come in more easily into those [chatrooms on the VLE], [I wish] it wasn't always necessary to create chatrooms. Bit of an old-fashioned platform we have... [it brings about] some sort of anxiety around the platform. So things should be a bit easier to access. [We would be] a bit less scared to open things.

The findings also suggest that the terminology used in the design of a learning system can have significant consequences on the usage of the system. For example one student describes the "intimidating" aspect of creating meeting rooms. She refers to the terminology employed by the system, in particular the concept of defining oneself as an administrator when creating such a room.

> Student: The forums […] are a bit awkward and somehow a bit like scary. I don't know why… surely it isn't dangerous, but… (laughs) it has to do with you having to be an administrator. It's like… I don't know if it's the wording, or what…

Such findings bring to mind more general concerns that computer jargon can be both "confusing" and "intimidating", as pinpointed in studies such as those of Richardson et al. (2002) and Harrison (2000).

Another hurdle for the students is the experienced length of time it takes for them to access the system.

> Student: It goes too slowly, doesn't it? You first have to go in and then you have to find the homepage on the site, then [type in] the passwords and then you arrive to a page that is very general, because you don't come in directly to our class site, you come to a joint site, and then you have to click your way in and it takes time! To say it straight, something isn't quite right: it goes too slowly.

It is interesting to note that what the students consider to be an unnecessary detour is in reality an intentional design, as the University wishes all Tetra users to first access a general page that channels

administrative information and news about social events. In other words, what the staff in charge of the VLE at the University intends to be an effective way of channeling general information, appears to the students as a tedious and poorly designed process. The students' discontent with the amount of time spent logging in to Tetra may stem from an expectation that technological tools should be straightforward and quick to access. Such expectations of speediness when using information technology are characteristic of what has been referred to as an "acceleration society" (Rosa, 2003), i.e. a society whereby the effectiveness of technology and the pace of life increase simultaneously.

Members of the teaching and administrative staff report that while some of them embraced Tetra as an advantageous solution from the start, others did not adopt the system without some skepticism.

> Staff member: It is not only because people were anxious about the technology, I believe, but it was also about whether or not you believed that this tool could fulfill the learning objectives that had been set for the type of education that we have. And in our program we have been concerned – because we are teaching how to help others – about the importance of personal contact with the other students and with the other members of the teaching staff.

This concern reflects a general unease throughout the institution towards online learning in professional educational programs whereby students are explicitly expected to develop and demonstrate social skills such as listening, interviewing, etc. This concern is especially relevant to social work education, as in this case study, but can be seen as relevant to all the study programs preparing to professions where direct face-to-face contact with clients or customers forms an essential part of the students' future work.

In summary, it appears that VLE users' readiness to accept the system is significantly dependent on their preconceptions and pre-understanding of the appropriateness of technological tools to educational processes. In particular, processes that appear complicated, terminology that is unfamiliar, and doubts about the appropriateness of online learning all seem to contribute to curbing the users' enthusiasm.

Elements of appropriation

<u>Objectification</u>

In the original model of domestication, objectification refers to the process of bringing a physical object into the domestic sphere, and making it an integral part of the home environment. It has been pinpointed that VLEs cannot exactly be considered palpable artifacts (Habib, 2005). However, they do go through a process of quasi-physical integration (or, in some cases, non-integration) into the user's information and communication technology landscape. The term objectification can thereby be used to relate both to the spatial aspects of the VLE use and to its more technical aspects, such as physical access to the system.

From learning space to learning place

Wahlstedt, Pekkola & Niemelä (2008) have outlined the need to transform e-learning environments from spaces to places, i.e. from mere physical platforms to social arenas that are invested with meanings, interpretations and expectations. Data from the interviews point towards a general understanding of Tetra as a place with a definite social function rather than a mere artificially created learning space. Many of the interviewed students refer to Tetra using metaphors that conjure up quasi-physical images of school, classroom, colloquium room, etc., and associate those online places with actual learning and social processes.

> Interviewer: If you meet someone who doesn't know Tetra […], how would you describe such a system?

> Student: In a way it is my classroom on the Internet. […] Because the site we access [on Tetra] is only our class. Even if it is via […] the school, it is still just our class. And you can also go into smaller group rooms and be with your assigned group, so actually it's school on the Internet.

The data suggest that this objectification of the system is related to the fact that students are spread out across the country and do not gravitate around a common geographical anchor point during most of their study period.

> Student: It is actually my school arena. Being a part-time student is a very lonely experience. There is no one at home that is involved in what I am doing at school [...], so in that sense Tetra is the place [I use] to attend school. After all, I am here [at school] only four weeks per year, and it is a bit like I didn't have another arena where I could "visit" the school.

In that respect, the objectification of VLEs as "places for learning" instead of being mere "learning spaces" may help reduce the isolation of distance learners. The data from this study points towards the existence of both types of isolation feelings as described in Venter (2003): several students report getting an insufficient amount of feedback from teachers, while others express the need to be a more intrinsic part of a learning community. However, the objectification of the VLE brings it to the core of the learning experience, thereby reducing the distance between learners and teachers, as well as tightening the link between students and their learning communities.

Tetra's integration and interaction with other technologies

In the literature on household and personal technology, the interplay between the various technologies that make up the "media ensemble" has been described as a key aspect of the process of domestication (Drotner, 2005, Moores, 1993; Haddon & Silverstone, 1993). Similarly, there are indications that Tetra is but one of many communication channels used by students to organize and perform group-based coursework. In particular, the interviewed students mention using instant messaging applications, text messaging or simply taking a phone call when they need to get hold of a co-student quickly and are unwilling to wait until they have logged onto Tetra. In addition, many learning activities that may have been performed with the help of Tetra often end up being performed via other modes of communication that are considered more suitable than Tetra.

> Interviewer: Why do you use other things than Tetra?
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> Student 1: Because a cell phone is something that you have with you all the time. You're not on Tetra all the time. So, if I'm going to send a message, I'd like to have the answer right away. I don't want to wait to tonight or in two days or whatever time it takes for this person to log onto in Tetra. Yes, and we have one in our group who is a bit slack, so we others in the group have sent [SMS] messages to this person and said: "now you have to go into Tetra and check".
>
> […]
>
> Student 2: It's actually a bit cumbersome to come into Tetra as well. […] it's a lot easier to take the cell phone and ring, isn't it? You don't have your PC with you all the time.
>
> […]
>
> Student 5:[…] I mean there's something [special] with private conversation.
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> Student: We have actually chosen to use MSN [Messenger] because we believe it goes faster, that it would be a bit easier to use.

Another reason for the use of alternative modes of communication seems to be that many students use home technological equipment that is either too slow or outdated.

> Interviewer: Do you have contact with your co-students outside Tetra? (…)
>
> […]
>
> Student: Via mobile phone, yes. We have given it a try on MSN, but it didn't work.
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> Interviewer: […] Why didn't it work?
>
> Student: Well, there was no… We are in a study group where everyone lives far into the countryside, where access to Internet was very poor.

The students of the program also have to get acquainted with systems whose usage is required by the School, such as the School's email system, which comes as an addition to the internal messaging system in Tetra. Some students express frustration as to having to relate to two separate and somewhat competing messaging systems for the same course.

> Student: I think that the student email system is a cumbersome appendage. I have to log in to the student email system with a new password […] it's like a completely different operation that takes five extra minutes. Why do we need to have both the messaging system in Tetra and the student email system?

Customization

The data from this study does not provide any indication that either the students or the academic staff members are interested in customizing Tetra to make it fit their own needs. This may be explained by the

fact that a group of staff members has worked at the institutional level towards establishing a common template and structure for VLE use for the whole department.

> Staff member: (…) we have discussed the most essential things with each other in that [VLE responsible] group, and then have presented the results to the rest of the staff. So they had the opportunity to come up with [reactions]. We can well say that it [the group] has been a bit despotic (laughs). But I don't think that there were many controversial questions related to that, really (…). The most important thing for the department was that we got a consistent structure and a consistent use of the system, I think.

Incorporation

The incorporation of Tetra into the daily routines of its users varies depending on a number of factors. A first set of factors may be found in the users' preconceptions and beliefs about technology in general and technology-based learning tools in particular. Another set of factors involves the degree to which the users experience their presence online to be useful and meaningful, either for their own learning, or for others'.

Generally, it seems that those students who are most technologically enthusiastic have integrated Tetra into their daily routines to a higher extent than those who do not use their computer unless they absolutely have to, which corroborates findings from, e.g., Koroghlanian & Brinkerhoff (2007-08). In particular, the technology enthusiasts use Tetra in many different physical settings.

> Student: I use Tetra more or less wherever there is a PC with an Internet connection. That means my portable computer, I use it at my cottage in the mountains where there's Internet connection, then I use it at home and then I use it at work, and then… yes wherever there's a PC with an Internet connection.

Other students are not particularly keen on technology, but also they diligently use any opportunity they find to get onto the VLE.

> Interviewer: When you are using Tetra (…) where are you?

> Student: Do I really have to answer that? I hope my employer won't hear [what I am saying]. I use it (…) at home, at my workplace, and if I'm visiting my daughter (…). I use it where I happen to be and have access to it (…).

Both students and lecturers mention that the VLE is an integral part of their life also when they are out of town or abroad, even when they are on vacation.

> Student: You can travel to a Southern destination, bring a couple of books and you can hand in your assignments [via Tetra].

Also members of the academic staff use Tetra in many different settings. However, one lecturer mentions that she avoids answering student requests outside office hours so as not to raise expectations.

> Lecturer: [I use Tetra] all day and all night, I'd say. But I try not to answer students' [questions] when I see that they have left messages at night or during week-ends. But it is not improbable that I will check to put it this way. I think that they shouldn't build up an expectation that they'll get an answer [at a time] which is free for "normal" people, even if they are part-time [distance] students.

The fact that technical issues related to access to the VLE (for example related to usernames and passwords) can be troublesome for some students plays a role in the integration of the VLE in the routines of its users.

> Student: […] My password didn't work […], so I had to get a new one, and then […]… I created a new one myself and suddenly it stopped working and then I got a very long password, so it is frustrating… It's ludicrous!

Another factor that plays a role in the students' routines is the appropriateness of the technological tools they have access to. It is apparent from the data that using Tetra without a broadband connection makes the process of downloading large documents inconvenient and time consuming. This may result in "pushing out" some of the online learning activities away from the home and into other spaces where the technology is more up to date and allows for a smoother access to the information needed.

> Student: The teacher put up a link to… how do you call it, a report from the Norwegian

Directorate of Health, and I sit at home on my slow modem and I get an estimated download time of 59 minutes and so and so many seconds. Then I realize that I just can't take it anymore. [But] I have been allowed to print out such reports at work and links that have to be downloaded […], because it's hopeless at home.

Such findings point towards a significant gap between Tetra's requirements in terms of technical equipment and the actual availability of such equipment in the students' home.

Conversion

Interview data reveals processes of "conversion" occur both among students and between students and lecturers. The word "conversion" may sound excessive, as it conjures up images of spiritual affiliation and religious identity. However, the process of building and cementing communities around particular beliefs about VLE use bears significant resemblance with religious faith. In particular, trust in the system's effectiveness as a learning and communication tool represents a major argument for those users who try to persuade others to begin using it, or to use it more frequently. In the case of Tetra, no student or staff member has the possibility to opt out completely from using the system. However, as outlined earlier, the degree of usage varies considerably from one user to the next. It is therefore not surprising to find that discrepancies in VLE usage result in frustration among some students and active attempts at persuading others to intensify their degree of VLE use.

Online activity as a focal element in student involvement

The data from the case study suggest that conversion to the VLE occurs primarily through use of the system. Conversely, when noticing that the general level of activity on Tetra is low, the students tend to lose interest in using the system as a communication tool.

Student: You are […] a bit lonely when you are in there [Tetra] and there is not a soul there. Then, goodness, I just log out.

Such reactions are evocative of issues of isolation and loneliness reported in the literature (Bambara et al., 2009; Kurtz et al., 2009).

On several occasions, student interviewees mention that they would like their lecturers to be more active on Tetra so as to motivate the students to participate to VLE activities.

Student: If there was more that was published by the teachers and the school, it would have been more motivating to go it and be more active myself.

Student: We have actually seen last year that some other students have published curriculum-related questions [on Tetra] which have never been answered. Or several weeks have passed before they got answered. And then you start losing motivation to use the discussion boards in a way. So if the teachers had initiated something, if they had been more committed [to using Tetra] then they might have pulled in several students from the class […].

Those findings are similar to those described in other studies that portray online activity as a self-generating, self-reinforcing process (e.g., Maor, 2003).

VLE as a central stimulus in student identity building

The data from the case study indicate that VLE use may facilitate the process of building or strengthening the learners' identities as students.

Student: [Tetra] becomes the thing that reminds me that I'm a student. That I don't procrastinate, - well of course I do procrastinate no matter what – but after all it helps keep me on track, [reminds me] that I am in actual fact a student, and that I will have to deliver within deadlines […] so it's the thing that contributes to structure my daily routine.

Student: There is nothing else [than Tetra] in my daily life that reminds me that I go to school, other than the four times a year I take the train down [to the University].

The VLE seems to be a powerful symbol of the learners' involvement in their study program, and in that sense, a significant element in the building of their identity as students. It may be suggested that this symbolic role contributes to giving it a central place in the lives of learners.

Conclusion

Through the use of the domestication model, a number of points that are relevant to the study of VLE use in distance education have emerged. In particular, the data suggest that a VLE can be seen as

disquieting by its users, especially due to the use of "intimidating" terminology. Also, the lack of integration or consistency between VLE and other communication or information systems may cause frustration among users. In addition, multiple passwords and usernames may lead to confusion and loss of information. In other words, unsatisfactory levels of user-friendliness in some of the features of the VLE may taint its general image, and contribute to stamping it as too convoluted and "alien". This may lead users to supplement VLE use with other media such as mobile phones, emails, or instant messaging systems. Because those media are commonly used for other purposes than learning, they may appear to be less complicated to relate to and can be more easily "domesticated".

However, the case study suggests that a VLE used consistently throughout a study program may become an inherent part of its users' lives. In particular, in this case study, the VLE is reported to have participated to building and strengthening student identity, by establishing a "lifeline" between the students and the school. In this case study, the VLE is also used not only in the home, but in many other places where an Internet connection of satisfactory quality is available. It is interesting to note that although distance learning is broadly considered an "at-home" activity, some informants relate that they often use alternative access points for the VLE, either because they happen to be in another place (at friends', abroad, etc.) or because their home equipment is inadequate. In that sense, the VLE becomes not only a domestic object, i.e. an object that finds its place in the home, but a domesticated object, i.e. one that has become an integrated part of its users' lives.

The findings from this case study can be used as basis for further research into VLE use in distance education. For example, a deeper investigation of the processes of mental construction of VLEs may bring about interesting insights into how VLEs may be designed and customized so as to reduce the incidence of user "alienation". Also, examining how VLEs are objectified, i.e. how they become true "learning places" for their users, may be useful in the process of designing study programs that are adapted to the social and educational needs of distance learners. Finally, a closer look at the concept of conversion may shed light on the inter-relational dynamics that take place within the learner group as well as between learners and teachers, which may in turn be used to increase the quality of course design and delivery.

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