

# ***Domesticating Everyday Technologies for Teaching***

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## **Abstract**

The complexity of technology integration into the teaching and learning practices of higher education students and instructors is not adequately captured in technology adoption models. Technologies are shaped not only by faculty as they integrate these tools into their teaching, but by students in their learning. Studies examining technology integration tend to take the classroom as the beginning and ending point for technology integration; however, beliefs, values, expectations, and experiences of technology begin long before the classroom. This study takes these experiences into account, exploring university faculty understanding of social media for teaching through the lens of domestication theory.

Domestication theory (Berker, Harmann, Punie & Ward, 2006; Haddon, 2011; Silverstone & Hirsch, 1992) draws on family studies, media consumption studies and studies of the social construction of technology to examine the confluence of the social meanings and political structures of the home as technology become integrated into domestic practices. This study uses the domestication framework to explore how values, beliefs, and experiences of social media and of teaching shape the decision-making processes of instructors as they integrate these everyday communication platforms into their courses. The domestication framework traces the trajectory of a technology from the point at which it enters the home through the social processes of domestication. The first stage is appropriation, in which the imagined uses for the technology lead someone to bring it home. The dual processes of objectification and incorporation describe the ways in which an individual or a group integrates a new technology into the physical arrangements and everyday routines of the household. It is through these negotiations that values and beliefs about everyday practice and the role of the technology become apparent. Finally, conversion, in which newfound practices and technologies are displayed, begins the process of appropriation for others.

Twelve university faculty were interviewed about their decision-making and experiences as they integrated social media into their teaching practices. Participants had varying levels of experience with social media prior to their decision to use social media in their teaching.

Analysis using the domestication framework suggests that the everyday experiences with technology outside the classroom affect the approach to integrating new technology into teaching. The domestication framework provided a valuable lens for teasing out the social and material beliefs inherent in the negotiation processes in which both instructors and students engage as technology is introduced into the classroom.

## **Keywords**

Technology adoption; Domestication Theory; Sociomateriality; Higher Education

## **Introduction**

The complex discourse of technology and societal need plays out in the push for innovation in the university classroom. Assertions about how society has transformed as a result of ubiquitous access to the internet filter into practical discussions of effective teaching and learning (Selwyn, 2007). With this rhetoric of transformation comes a continuing, and at times unquestioned assumption that technology must be prominent in education in order to prepare students to become citizens within the networked society. One such push is to integrate the social media platforms that are used to coordinate activities, connect to friends and acquaintances and create and share information (Tess, 2013). However, studies examining the effect of using a variety of social media platforms on student engagement (Junco, 2012) or collaboration (Evans, 2014) are inconclusive. Some models of technology adoption, specifically for teaching, such as TPACK (Mishra & Koehler, 2006) recognize the complex interaction of teaching, content knowledge, and technology; however, they fail to account for the way that everyday practice with technology shapes the values and uses faculty and students ultimately attribute to technology for learning and teaching. An examination of how social media platforms that are readily available to faculty and their students are taken up (or not) provides a valuable site in which to explore the complex socio-

material relationships that transpire in teaching and learning technology adoption. The aim of this study was to explore why instructors were using social media in their teaching in order to understand how these tools have been appropriated or domesticated in these seemingly traditional education contexts.

## **Social Media Use in Higher Education**

Social media tools such as Facebook, Instagram, and Twitter are defined by technical affordances that allow users to maintain personal profiles and share information across social networks. Social media platforms are used by students for personal communication and media consumption and to maintain social connections, share information, and to keep up with current events. In educational contexts, students use social media platforms for coordinating collaborative work (Lampe, Wohn, Vitak, Ellison & Wash, 2011). The use of social media platforms for formal learning in higher education has been examined in relation to the value of specific tools such as Facebook (Manca & Ranieri, 2016) or Twitter (Evans, 2014). Among the many possible outcomes for social media use in courses, platforms have been explored more generally for the perceived potential to improve social presence in online courses (Lim & Richardson, 2016), to support the development of social identity, and to promote information production and sharing across students' social networks (Rowan-Kenyon et al., 2016).

While usage statistics demonstrate wide adoption of social media tools among 18-29-year olds, uptake is slower among older users (Greenwood, Perrin, & Duggan, 2016). When considering the professional and personal networking activities of academics, Veletsianos and Kimmons (2013) observe that academics are increasingly using social media platforms not only for managing personal connections but for building and maintaining professional networks as well. In their study, they found that academic uses of social media bring into question the boundaries that separate personal, professional and pedagogic roles.

## **Domesticating Social Media for University Teaching**

This study attempts to understand the adoption of technology, specifically social media, for university teaching using domestication theory. Domestication theory emerged as an approach to studying the intersection of media, technology, and everyday life (Berker, Harman, Punie & Ward, 2006; Haddon, 2011; Silverstone & Hirsch, 1992). Drawing on family studies, consumption studies and studies of the social construction of technology, the domestication framework provides a conceptual lens with which to examine the confluence of the social meanings and political structures of the home as technology becomes integrated into domestic practices (Silverstone & Hirsch, 1992, p. 2). Technology domestication describes “the process at work as people, both individually and [in groups], encounter ICTs and deal with them, sometimes rejecting the technologies and at other times working out how exactly to fit them into their everyday routines” (Haddon, 2006, p. 195).

This approach to studying technology use focuses attention on the broader social and political meanings held by those who use a technology, and not exclusively on the material properties of the technology itself. Silverstone (1996) contrasts instrumental approaches to understanding technology adoption, in which a technology is seen to have designed uses that get taken up by users, with a view of technology use in which a tool is appropriated through a process of mutual shaping. Reflecting on 15 years of research using the domestication framework, Silverstone observed that a strength of the approach lies in its value for highlighting that “both parties to the interaction, the human and the technological, and in both material and symbolic ways were, and are, in a constant dialectic of change” (p. 230). Bakardjieva (2011) notes that our daily routines are infused with “concepts and action recipes that we have been taught by our culture” (p. 62). When these routines are interrupted or become problematic, “we face the need to creatively ‘deliberate,’ or in other words come up with new ways of seeing a particular sector of our life world and acting within it” (p. 62). By focusing attention on the negotiations that occur, human to human, and human to technology, as a new technology becomes a part of the everyday routines of the home, the domestication approach surfaces the values and beliefs that underlie our social structures and serves to highlight how technology, both instrumental and symbolic, is constructed through use. Domestication places attention on the users and their context. Through the choices that they make, users are recognized as actors in determining the function and value of the technologies that they use. As noted by Silverstone and Hirsch (1992), this “production and reproduction does not end with the disappearance of new technology into the home...it continues in consumption” (p. 3).

Silverstone and Hirsch (1992) describe the domestication of a new technology as a negotiation of the symbolic meaning within the practices of everyday life that takes place within the micro-social discourses of beliefs and values of the *household*. They describe this negotiated use as taking place within the moral economy of the micro-social context of household.

Objects and meanings, technologies and media, which cross the diffuse and shifting boundary between the public sphere where they are produced and distributed, and the private sphere where they are appropriated into a personal economy of meaning, mark the site of the crucial work of social reproduction which takes place within the household's moral economy" (Silverstone, Hirsch & Morley, 1992, p. 18-9).

Sørensen (2006) observes that by examining the active role that user play in deciding how to use technology, the "main emphasis should be put on the production of meaning and identity from artefacts" (p. 46). The domestication approach therefore charts the material and symbolic narrative of an object as it enters the home as something new that disrupts the physical arrangements and routine practices within the household.

Domestication begins with appropriation. Silverstone, et al. (1992) pinpoint appropriation as the moment that an object "is taken possession of by an individual or household and *owned*" (p. 21, *italics in original*). Ward (2006) describes this phase as *imagination work* in which the decision to appropriate a new technology is based on use that have been observed or presented by others. In their study of the domestication of the personal computer among students in community computer courses, Hynes and Rommes (2006) framed appropriation in terms of the motivations for learning to use the computer, as described by their participants. These motivations that included helping their children with the computer, finding information, and developing overall competency came from participants' personal understanding and expectations of the value of information and computer literacy that developed in response to the to the increased visibility of ICTs in all aspects of daily life. The appropriation phase, therefore, is initiated based on the symbolic interpretations, hopes and expectations that people attach to a new technology.

Once a technology makes its way into the home, the domestication framework describes the dual processes of objectification and incorporation in which an individual or group integrate a new technology into the physical arrangements and everyday routines of the household. According to Silverstone (2006), objectification can be observed in the physical placement of the object in the "material, social and cultural spaces of the home" (p. 235). This arrangement within the spaces of the home objectifies the "values, the aesthetic and cognitive universe" of those who identify with the new technology (Silverstone & Hirsch, 1992, p. 23). Incorporation describes the temporal shifts in routines that must take place in order to accommodate a new technology. Bakardjieva (2006) suggests that the process of incorporation involves "elaborate schedules for access and rules of engagement" (p. 65) that lead to changes in everyday routine. Analysis of the processes of incorporation and objectification demonstrates the strategies that individuals use to control the changes in routine and the material and social arrangements of the household brought about by the introduction of new technologies (Haddon, 2011). In the higher education context, these routine practices play out in the social conventions and university policies that dictate the roles and actions of students and instructors. The placement of technology within the teaching arrangements of the classroom can shift to accommodate new technologies. Assessment practices, technology selection, the location of learning (online or in the classroom), even in what counts as learning are all open for negotiation when a new technology is introduced.

Where objectification and incorporation are concerned with meaning-making within the home, appropriation and finally, conversion, the fourth dimension of the domestication framework, are concerned with the relationship between the home and the outside world (Silverstone & Hirsch, 1992, p. 25). It is through conversion that individuals make their consumption of new technologies public, displaying competency, skill and ownership. Consumption is therefore bound with identity and within this public discourse "the meaning of objects is used as 'currency' in the interplay with the public environment" (Pierson, 2006, p. 214). Silverstone, et al. (1992) use the example of teenagers using their music consumption in the privacy of their bedroom as a "ticket into peer-group culture" (p. 26). The exchange of both material and symbolic artefacts represents the conversion of consumption into social capital. These public displays of consumption communicate symbolic meaning outside the home and serve to initiate appropriation for others. Appropriation and conversion are therefore linked in the commodification of technology.

Buckingham, Willett & Pini (2011) observe that conversion is the least studied dimension of the domestication framework and this is perhaps because these moments of display are difficult to identify. Within the context of this study, this challenge is exaggerated by the covert nature of university teaching. Occasions for the display of new teaching practices are typically limited to the traditional academic methods of knowledge dissemination such as conference and journal publication. This requires that faculty display the private experiences of teaching with new technology within the accepted practices of evaluation and research. Further, as will be demonstrated in our analysis of participant interviews, what counts as new practice is not always clear. Therefore, following

Haddon (2011) as he observes that conversion reflects “how we mobilize these ICTs as part of our identities and how we present ourselves to others, for example, in how we talk about and display these technologies” (p. 313), the focus of analysis is on the way that faculty talk about technology following opportunities for objectification and/or incorporation.

## Method

The focus of this study was on understanding the progression of social media tools from everyday use into the classroom for teaching. Over two rounds of recruitment, a total of 12 faculty participated in semi-structured interviews. In 2011, a general call for participation was sent to university faculty through an email list dedicated to learning and teaching topics. In addition, a request for participation was made to the central educational technology group at the university. Six participants agreed to semi-structured interviews. These participants are referred to as SMP1 to SMP6. In 2013, a second sample of participants was recruited using a list of faculty who had received funding from a university program designed to encourage technology-enhanced teaching. A further six participants participated in the second round of interviews. These participants are referred to as GH1 to GH6.

Semi-structured interviews were used to understand how social media were being integrated by faculty into their teaching. Participants were asked about their expectations before using the technology, their experiences using the technology, and the pedagogical choices they made as they integrated the technology into their teaching. The focus was on developing an understanding of how these technologies had become a part of instructors’ everyday teaching practices.

Interviews were recorded and transcribed. All data collection was approved by the university’s Research Ethics Board. Qualitative content analysis (Bryman & Bell, 2016) was used to develop themes describing how participants described their experiences with social media outside the classroom, why they decided to use the technology, and how the use of the tools affected their teaching. These themes were then mapped on to the domestication framework to explore participants’ perspectives and experiences with social media and teaching through the process of adapting (or not) their pedagogical understanding.

## Findings

In reporting the findings for this paper, the domestication framework provides the focus for the complex interplay of expectations, values, and experience that is technology integration. Participant experiences are used as illustrative examples. Therefore, only some participants’ experiences are reported here.

### *Appropriation: Imagining the Possibilities*

Appropriation initiates domestication and implicates the imagined values and uses that an individual attributes to a technology as they make the decision to bring it into a domestic space. Participants in the study generally described themselves as early adopters of new technologies outside the classroom. To some extent participants all reported using social media like Facebook and LinkedIn personally and professionally prior to their decision to incorporate the tools into teaching. When it came to learning about new technologies in relation to their teaching, they were diligent researchers, reading blogs and news sources and attending technology and teaching conferences and institutional workshops. While there were similarities in the way that participants reported learning about new technologies, they reported distinct differences in how and why they approached the decision to appropriate new technologies for teaching.

Although participants’ experiences with social media outside the classroom informed their understanding of the possibilities of the tools within the classroom, their imagined uses were also related to their understanding of teaching. GH2 described a project that was YouTube-like in which videos were being produced to explain the working of lab equipment. GH3, a member of the same project team emphasized that the project was a response to increased class size and saw the value of the technology to leverage students’ ready access to smartphones and tablets so they could access course content outside class time. Both participants described the value of the new technology as supplementing in-class content delivery methods.

The *imagination work* (Ward, 2006) that leads to appropriation is not only connected to the affordances of the technology, but to the perceptions and beliefs about the role of technology in the students’ lives. As indicated by GH4 who decided to use Facebook to encourage discussion of case studies ahead of class, he selected the platform assuming that students would perceive it as less rigid and unfriendly.

In some interviews, it was difficult to discern appropriation decision points for specific social media tools. For expert users of social media, a specific platform was discussed as a seamless part of a technological ecosystem in which the tools, their teaching, and their personal and professional communication practices were unified by an overall ideological position that respected open, social, and collaborative communication. As SMP1 explains her decision to move from blog to Facebook for student collaboration and discussion

I've tried before to make them do it, and as I said, I wasn't that successful. The blog started to be a really good entry point but, again, there the conversations, we started collaborating through blogging, the conversations were really limited because it was still a school space. What I found is when they started moving into Facebook, it's their space. So they're interacting with each other when they need to. They're forming their own kind of communities, and they're actually taking it much further.

When considering the use of a particular technology for teaching, these participants drew on their experience of the tool outside the classroom. In explaining his consideration for using a blog for his classroom teaching, SMP2 indicates:

I've just this year gotten a blog...I'm not sure what I'm going to do with it at the moment. It's summertime. I'm just sort of posting professionally relevant updates... I can imagine it being used a bit as a discussion forum...

The tools were being considered for use in teaching because of their potential to provide opportunities for group discussion, sharing of content across courses and from year to year, afford students with a collaborative space and to broadcast experiences across distance, as was the case for SMP3 when she considered using Twitter with her students when she was required to attend a conference during a scheduled class time. For all participants appropriation was contextualized within their experiences of technology and their beliefs about teaching. These shaping influences were present in the decisions they made as they incorporated technology into their teaching.

#### *Objectification and Incorporation: Negotiating Teaching and Learning*

Social media tools like Facebook and Twitter are not exclusive to the classroom. Unlike institutional platforms like the LMS, these tools are used by students and instructors outside the context of the classroom and have norms and expectations for their use attached to them. While it is the decision of the instructor to use social media tools for teaching in their course, an analysis of the dual processes of objectification and incorporation reveal the necessary negotiations for control over the pedagogic choices in which instructors and students engage.

Participants with experience with social media in the personal and professional aspects of their lives described their intentions for using social media in their teaching as open and emergent. Yet, while they understood the potential for social media to disrupt power relations, they described a complex negotiation of authority as they incorporated these tools into their teaching. Participants asserted their authority by determining the place or role that various technologies assumed in the learning environment. For example, one participant used a blog to post course materials, the institutional LMS for confidential information like student marks and email, and PowerPoint for presenting lecture material; however, she endorsed her students' use of what she described as their own communication spaces such as Facebook for collaboration. The participant outlines the limits within which she asserts her authority in the spaces in which learning takes place. As she incorporates social media tools into her teaching, she is comfortable with allowing new practices to take shape in collaboration with her students. By allowing students to use their own spaces informally and by acknowledging the potential legitimacy of their contributions for learning within the course by asking them to cite Facebook content in course work, she negotiates authority while allowing for emergent practice.

They will show me, and what's started to happen is they use it to present material, and because part of their research is to show, presentations are digital, so my presentation are within a more Power Point type space or the blog, so they've seen these spaces used to present, so they use Facebook. But really, the work there is their collaborative space... It's an informal learning component. I don't go in the space with them because it's their informal space, and I find that respecting the boundaries with them allowed them to say things and experience things that they wouldn't do if I was in the space...It's nothing that gets marked... I'm letting them bring their way of communicating into my classroom instead of imposing my own.

This tension between control and negotiated practice can be seen among several participants and it is notable that while there is acknowledgement of the fluid *spaces* in which learning can take place, there was no shift in

how learning was assessed. The informal learning that took place outside the classroom was not recognized formally in the syllabus.

Some participants suggested that their decision to use social media were, in part, based on an effort to distance new learning activities from traditional academic spaces, such as the institutional LMS. In these cases, social media were positioned as supplemental to the formal and graded elements of the course such as the textbook, lectures, labs quizzes and exams. In these cases, social media were used to house content that was prepared and packaged for consumption within these new spaces by the instructor.

In these cases, to further distance the activities from the traditional academic space, no marks were assigned to the use of the elements. Student participation was tracked, but access was anonymous in order to protect the students. Participants hoped that by placing the academic content within the students' familiar social spaces, students would be more likely to engage with it. However, they found that students had to be encouraged to visit the materials. Because the content was positioned as supplementary, participants reported that they found the need to connect the new sites with the traditional structures of the course by adding questions about the content on subsequent tests or exams.

#### *Conversion: Sharing Experience*

The fourth dimension in the domestication framework is conversion which involves display and discussion of new technology outside the home or classroom. Through public display the symbolic meanings and material values that individuals hold for a new technology are revealed. A challenge with identifying this discourse in the context of this study is that university teaching is a largely covert act, where even online, the doors remain closed to all but the teacher and students within. Sørensen (2006) notes that "when domestication of artefacts may appear to involve adaptation and habituation, it is through hindsight-the knowledge of what actually happens" (p. 48) and indeed, throughout the interviews participants found opportunities to connect their experiences of incorporation with their evolving relationship with technology and with changes in their approach to and understanding of their teaching practice. The introduction of new technology into teaching does not always result in changes to practice and this failure to domesticate the new technology was present in the interviews too.

Social media were seen as a site for collaboration that allowed students to learn within their own familiar spaces. One participant described herself as a foreigner in their space and the value she placed on allowing her students to learn in their own contexts was consistent with the image she presented as a teacher who valued collaboration. She privileged student communicative practice by recognizing their online space as legitimate.

I think that bringing them their mode of communication in their culture helps them learn from where they are situated, and knowing that I accept that and acknowledge that, we build trust and it becomes a conversation.

Her domestication of Facebook as a tool for student collaboration fit well within her conception of teaching as a conversation.

For one participant with no previous experience with social media, Facebook held symbolic meaning as an opportunity to engage students in what was considered to be their own space. In this sense, the tool contrasted with academic content or academic online spaces such as the institutional LMS. This participant abandoned the use of Facebook after one semester when the project failed to realize the goals of student engagement with content outside the course. For him, the project outcome re-asserted the value of the lecture over the use of new technologies that take time away from teaching.

## **Discussion**

Educational technology adoption models (for example, see Mishra & Koehler, 2006) relate pedagogical potentials to technical affordances of various technologies. This approach to technology appropriation for teaching posits a direct relationship between the material properties of a technology and a particular pedagogical outcome. Traditional technology integration models do not adequately account for the complex, iterative negotiation and experimentation – the non-linear and non-sequential journey to pedagogical transformation described by our participants.

For instance, while GH2 and GH3 prioritized material affordances by concentrating on the technical quality of their instructional videos, they demonstrated some concern for the pedagogical application and

empirical usefulness of the videos. GH4 and GH6 hoped for the promise of student discussion in their use of Facebook, but focused on the production of content during implementation.

Moving beyond technology adoption models that focus on means-end relationships (Selwyn and Facer, 2014), the domestication framework offers an approach to understanding technology use in education that acknowledges human agency by recognizing the negotiated, emerging, and often contradicting relationship between an individual's symbolic and material values operating within the larger context of the university. Our findings suggest that material properties and pedagogical stances are only a starting point in the domestication of technology for teaching.

Studies using the domestication approach focus attention on understanding how a new technology affects the routines of a household (Berker, Hartman, Punie & Ward, 2006). In this study, routine practices of teaching were determined in the tasks implicated in learning and assessment. In describing the imagined (objectified) and real (incorporated) role of social media within teaching and learning transactions, our participants revealed how these new tools affected the routines of their classrooms. For some of our participants, there were no apparent changes to their teaching routines that resulted from the use of social media. This was evident for participants who used social media as way to deliver supplemental content (Kirkwood & Price, 2014). For GH2 and GH3 the only change that was necessary to classroom routines was to add a way to test student knowledge in order to give the supplemental activity authority. GH4 described his uneasiness at the need to adjust the use of his in-class time to allow for discussion related to what was conceived of as supplemental online content.

However, the participants who reported using social media tools to facilitate collaboration and promote open forms of knowledge sharing described changing their classroom routines to integrate new practices. SMP1 observed that the use of social media for student collaboration meant that she did not have to spend time in class explaining how to communicate online. The interpretation of the symbolic and material values attributed to social media from appropriation to incorporation provides a glimpse into the real changes that take place in higher education classrooms as technology is integrated into teaching. Such changes to practice are neglected when the effects of technology enhancement are measured strictly in terms of learning outcomes (Selwyn, 2010).

By tracing the changes that occur both in practice and in meaning as a technology moves from appropriation to incorporation reveals the processes and values at work within the domestic context. Our findings demonstrate that change can be found not just in the carefully designed interventions that are typically the focus of educational technology research, but in the smaller, iterative modifications to practice that take place on the fly while a course is underway. This was evident for example when SMP1 recognized the value of student contributions in class that arose from their collaborative discussions within their personal Facebook groups. The domestication approach surfaces these changes by focusing on changes in meaning and practice that emerge through the small moments of change that together represent iterative pedagogical transformation (Johri, 2011). The domestication approach focuses our attention on human agency in relation to technology and allows us to uncover the struggles that people face as their routines are necessarily disrupted when a new technology requires new practice in order to realize imagined uses. These glimpses into the value of openness and collaboration demonstrate a possible future that Groom and Lamb (2014) suggest as the embodiment of the early democratic promise of the Internet.

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