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Abstract

The purpose of this paper is to argue for the importance of sociological approaches to educational technology research which can make new advances in the field that complement the existing research base. Such research can address questions of how individuals use technology across different spheres of their lives, including education, and asks what role technology plays in educational institutions and how it interacts academic practices. Research of this kind can tell us much about how we might adopt and adapt technologies from outside education to support teaching and learning. By conceptualising technology use as social practice, rather than as attributes of a tool or inherent traits of individuals, we can begin to understand how the values and assumptions that underpin the ways technologies are used can enable or constrain their integration into education. The paper draws on two recent studies to illustrate how this approach can be used to frame research in educational technology and suggests avenues for future research.

Keywords

technology, conceptualising, social, education, higher, practice, experiences, research, student

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Conceptualising technology use as social practice to research student experiences of technology in higher education

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Abstract: The purpose of this paper is to argue for the importance of sociological approaches to educational technology research which can make new advances in the field that complement the existing research base. Such research can address questions of how individuals use technology across different spheres of their lives, including education, and asks what role technology plays in educational institutions and how it interacts academic practices. Research of this kind can tell us much about how we might adopt and adapt technologies from outside education to support teaching and learning. By conceptualising technology use as social practice, rather than as attributes of a tool or inherent traits of individuals, we can begin to understand how the values and assumptions that underpin the ways technologies are used can enable or constrain their integration into education. The paper draws on two recent studies to illustrate how this approach can be used to frame research in educational technology and suggests avenues for future research.

Introduction

Digital technologies are playing an increasingly important role in shaping activities across society (Castells, 2000a; 2000b). In higher education, technology is improving access and offering new learning experiences on and off campus. In concert with other changes in the sector that are bringing a more diverse student base, technologies are beginning to support to new educational cultures that change the ways students, academics and institutions interact.

To develop our understanding of the nature of these new cultures of learning we need to move beyond investigating what students do when a particular technology is integrated into a particular task or course, and turn our attention to exploring how students experience technologies across the array of everyday and academic contexts in which learning takes place and discover what factors influence those experiences. Specifically, we need more investigations that include the “social, political, economic, cultural and historical contexts within which educational technology use (and non-use) is located” (Selwyn, 2010, p. 66).

A line of work that has sought address this complexity is the developing body of research into the broader student experience of technology. This research has challenged the idea that all young people can be considered ‘digital natives’, revealing the diverse ways in which technologies are adopted, adapted and often discarded (Ellis, Weyers & Hughes, 2012; Hargittai, 2010; Jones & Czerniewicz, 2010). This key insight has important implications for how technologies are integrated into education, and particularly highlight the need to account for the varying technology-related skills, knowledge and dispositions learners bring to their studies (Dohn, 2009). But the findings invite us to go further still in advancing understanding of student experiences of technology, drawing on sociological constructs.

Conceptualising technology use as social practice offers as a way of thinking about technology that simultaneously moves away from focussing on the technology itself or on the characteristics of the user. In the past technology use has often been framed by the features of tools themselves. This view is limited because a tool’s functionality is only available to the extent that a user is able to or wants to use it. It is equally limited to consider technology use in terms of traits characteristic of an individual. These limitations can be addressed through the concept of social practice, which offers a perspective of technology use in terms of how people use technologies in different contexts, in different ways, for different purposes.

This paper will first examine common ways of conceptualising technology use and consider what it means to conceptualise technology use as social practice. It will then move on to explain how this conceptualisation has been used to research the integration of Web 2.0 tools in higher education and to explore student technology experiences in and outside of education. Finally, it will argue for the utility of a social practice conceptualisation for further investigating student experiences and new cultures of learning, and suggest further avenues of research.

Current ways of conceptualising educational technology use

First, let us consider some of the ways we usually conceptualise technology use for education. A very common approach in the literature is a techno-centric view that focuses on the 'affordances' of a technology (Oliver, 2005). Authors make assessments about the educational purposes to which a technology could be used based on its functionality. This conceptualises a technology as something that enables, or could enable, particular educational activities by virtue of built-in, pre-designed features. This kind of discussion often occurs in the early stages of an emerging technology, in the absence of empirical evidence or on the basis of exemplar implementations that demonstrate the utility. Claims may be made about how the technology will 'revolutionise' or 'transform' education, which lead almost inevitably to disappointment when this does not actually occur (Friesen, 2008).

These kinds of arguments spark new ideas about what might be possible and inspire new innovations in teaching and learning which could be tested in practice. But what is often missing from this conceptualisation of technology is consideration of the people using the technology, be they students or teachers. And if they are considered they are often 'idealised' rather than realistic. The difficulty here is a reading of the notion of affordance as one that imbues the technology itself with a particular function as an inherent feature. The functionality of a tool, however, is only relevant when a person has the skills, knowledge and inclination to make use of it in a particular way. So functions exist in relation to those who use them and those who use them can be highly variable in their skills, knowledge and inclination.

Another common way of conceptualising technology use is as the contextual use of a particular technology for a particular purpose (Selwyn, 2010). This is often the next step after a new technology emerges (or is re-discovered) and is a means by which claims made can be tested in practice. Whether it is studied using qualitative, quantitative or mixed methods approaches, this mostly occurs as a form of exploratory case study whereby a particular application of a technology is investigated with a particular group of learners in a specific context. When well designed, this type of research is powerful in generating findings about the effectiveness of pedagogical approaches using technology with learners, by measuring learning outcomes or processes.

When researchers build on the findings of others and are informed by theory, our understanding of how to integrate technology effectively into particular educational contexts advances. But, we usually do not find out much about the learners and their use of technologies beyond that particular context, and therefore know little about what the learners bring to the context in terms of knowledge, skills and inclinations in relation to technology. It is this information that might help us interpret some of the more perplexing findings from case studies of technology implementations that show that students use technology in often unpredicted and sometimes sub-optimal ways, despite the careful design of a learning environment.

A relatively newer avenue of research comes from efforts to conceptualise learners' technology use more generally. Much of this work was sparked by interest in and critique of the 'digital native' hypothesis, and there have been numerous studies that have tried to gauge the levels and nature of technology use amongst students across a range of activities, both academic and everyday (eg. Ellis, Weyers & Hughes, 2012; Hargittai, 2010; Jones & Czerniewicz, 2010, Kennedy, Judd, Churchward, Gray & Krause, 2008). One of the most significant and illuminating findings of this body of research has been the sheer diversity of technology use, even within what might appear superficially to be relatively homogenous generational cohorts. Most of this research has been conducted as large scale surveys, with only limited qualitative and mixed methods research to date. So, although, these studies provide an overview of students' technology activities, they do not provide answers to more subtle questions about the ways in which our students use technology and why.

The in-depth research that has been done more recently further highlights the diverse range of skills, knowledge, interests and values that individual students bring to technology-based activities (eg., Corrin, Bennett & Lockyer, 2013). Furthermore, this work clearly shows that technology use is highly contextual, with

individuals adopting and adapting technologies in different ways in different contexts to suit their particular needs, but also shaped by social influences within those contexts. This research, which puts a student at the centre of the study and follows him or her through multiple contexts, highlights the value of sociological perspectives on technology use that will shed further light on how technology can be used to support learning.

Technology use as social practice

Technology use as social practice moves beyond the functions of a technology or experiences within a particular context, and considers it as a range of socially shaped activities an individual engages across the different arenas of their lives. Dohn (2009), for example, draws on the concept of social practice out of the work of Bourdieu (1992), suggesting that it is 'Web 2.0 practices' we should be considering rather than focusing on the functionality of 'Web 2.0 technologies'. She argues that new technology tools arise from existing practices, which in turn are adapted in response to the new technology, and this in turn influences further development of the tools. This interactive relationship seems obvious, but it is not a way of thinking that fits with the notion of new tools that emerge from nowhere with the potential to transform education. Using a social practice perspective stimulates us to think about the practices that underlie the features of a technology tool, leading us to pose questions about the coherence between Web 2.0 practices and educational practices.

Making this analytical comparison further helps us to consider what a social practice perspective might offer. As Dohn (2009) notes Web 2.0 practices could be characterised as follows – participation is an end in itself, though may be driven by secondary goals; knowledge, competence and participation are distributed (and unevenly so); learning occurs through participation. Educational practices, on the other hand, can be characterised like so – the purpose of participation is to acquire knowledge and skills for later use; knowledge and competence must be individually gained so they can be demonstrated/accredited; learning is measured by what is evaluated. Dohn asks then: What tensions arise between these two sets of practices?

This type of analytical exercise is important because many of the tools we are increasingly interested in integrating into education assume practices that might not be coherent with educational assumptions. Adopting a social practice perspective helps us to uncover the nature of these tools and determine how to address misalignments between underpinning assumptions.

Examples from recent research

Two examples from recent research help to demonstrate the practical utility of a social practice perspective in studies of student use of technology. The first example is a study that lent itself to a post-hoc analysis framed using Dohn's (2009) approach, while the second example used a social practice mentality from the outset. Both examples are summarised below, but full reporting of each can be found in the references.

Example one

The Educating the Net Generation project was originally conceived as a standard collective case study of six Web 2.0 implementations, across three Australian universities and funded by a government agency now known as the Office for Learning and Teaching (Bennett, Bishop, Dalgarno, Kennedy & Waycott, 2012). Multiple case studies were conducted at each university to investigate the integration of Web 2.0 tools into existing units within undergraduate degree programs. The same methods were used to collect, analyse and report the data for each case, involving:

- field notes about the development of the design by the academic staff teaching the unit
- an evaluation questionnaire in which students were asked about their experiences of the activity with questions about knowledge, skills, attitude, appeal and implementation
- focus group interviews with students
- interviews with key teaching staff

The results of the study highlighted some challenges common to many educational technology implementations – the need to support students to develop skills in using the tools and limited institutional support available for some of the emerging technologies used. Both were anticipated by the project team and, because strategies were designed to address these challenges, neither caused major problems for the

implementations. Overall, there were mixed results for the implementations and further analysis was conducted to explore the tensions that emerged when trying reconcile Web 2.0 practices with educational practices.

Contrasting examples from two of the cases highlight how these tensions can manifest themselves. The task with the best alignment between Web 2.0 and educational practices occurred in a journalism unit in which the students were required to write a blog containing local news stories. The task was 'authentic' in that developing journalistic blogging skills was immediately and obviously relevant to students' future profession. As might be expected, the nature of authorship and audience were unproblematic because the task itself was about engaging with Web 2.0 content creation. The activity was not an approximation of another form of educational task. The only inauthentic component (being marked on the blog) was not seen as controversial because the single authorship of the blog aligned with individual assessment that underpins the accreditation function of the university unit.

By contrast, there was much less coherence for students undertaking a wiki-based collaborative writing task for a psychology unit. While developing material in the wiki offered new ways of working with content in psychology, some students divided up the work cooperatively rather than working collaboratively, with uneven input. There was also very little editing of each others' contributions, largely because many students said they were not comfortable with editing each others work on the wiki. These experiences highlight the difference between the academic expectations of equal input by group members and the distributed authorship models common in the Web 2.0 world where any voluntary contribution is valued.

A possible conclusion is that a better task design was needed in the case of the wiki integration, but the case also raises the question of whether the design was attempting to overlay the tools with educational possibilities they simply did not have because the social practices that underpin them are not sufficiently coherent. This leaves the question open as to the extent to which a Web 2.0 tool can be adapted or how much the culture of teaching and learning can change to better fit a tool we might want to use. The answer will vary depending on the nature of the tool and the teaching and learning context, but it is likely to be determined by the match between the social practice underpinning each.

Example two

The second example is a study that conceptualised technology use as social practice from its inception and used concepts from technology appropriation theory and identity theory to guide the investigation (Corrin, Bennett & Lockyer, 2013). In this study the focus was on what students did with technology and why, and how their technology use related to how they saw themselves in the everyday and academic contexts they moved through in their lives. In essence, this study sought out participants who we might regard as 'digital natives', by virtue of their age. The study began with a survey administered to first year students at one Australian university, across a range of disciplines. The survey asked questions about participants technology-based activities, in their everyday and academic lives, and asked for volunteers to participate in a more intensive qualitative component.

The survey results were used to identify 14 case study participants who represented a cross-section across a range of technology use activities detected in the survey. Firstly the students were interviewed individually and then asked to complete a diary of their technology-based activities over a three week period during the academic session. They received daily text messages to remind them to submit their diary entries, and at the end of the study period the diary entries were used as a stimulus for a final interview. During the three weeks the participants were also observed online in any activity consented for the researchers to access. This included social networking, blogging, and participation in discussion forums.

The results showed that even in this group of 'digital natives' technology use was highly varied. Participants used the same tool in different ways, they used different tools for the same purpose, and used varying ranges of tools depending on their personal interests and social priorities. Amongst the group there were very different ideas about whether to follow the latest technology or not, and peer influence was very strong, as we might expect. In terms of the tools they used for academic study, they tended to be fairly conservative. They were content to be led by what the university offered and tended to only use the technology required by the course of study. This is similar to other studies that have found only limited connections between everyday and academic technology activities (eg. Margaryan, Littlejohn & Vojt, 2011).

Given that these are high end technology users, what do their patterns of use say about our assumptions for educational applications of technology? One conclusion might be that the social practices underpinning everyday technologies are too different for student to unproblematically transfer what they do in those realms of they lives into the academic contexts. Further, given the kinds of social practices dominant in education there may be little incentive for them to do so. This has implications for the expectations we might have that students

will develop technology-supported learning practices for their personal study, as well as the expectations we might have of them building on their everyday technology experiences when tools are integrated into formal learning experiences.

Discussion

The findings from both of the example studies discussed highlight how social practices interact with the technology tools that we try to integrate into education. The idea that tools are value laden is not a new one, but using Dohn's (2009) approach to analysis shows us more clearly how this is the case with Web 2.0 tools that have an existence outside education, but also true more subtly of tools made for education. Learning management systems are underpinned by particular assumptions about how learning and teaching occurs, as is the more recent phenomenon of MOOCs. These tools support particular practices we are familiar with in education, but nevertheless require analysis to understand their fit with the educational practices of a given context. In so doing we find that MOOCs appear to offer a partial fit with education, catering relatively well for large class self-paced learning, but less well for forms for which the interactions of teachers and students are crucial for success. Thus, the notion of social practices offers us a way to critically examine technology tools to consider how they might be and how they are used.

We could also conclude that technology use is even more complex when we start to consider what students bring to the learning context and what they do with technology to achieve the various tasks as they interpret them. The diversity of skills, knowledge, interests and activities amongst students poses some significant challenges for how teachers integrate technology, and may also tell us much more about why technology implementations fail to achieve the results anticipated uniformly for all students. If we are going to be focused on learners we should know much more about them.

A social practice perspective on educational technology opens up rich avenues for further research. Among those that are immediately relevant could address questions about how students use technology for personal study or peer learning outside formal structures of classes and tasks set by teachers. We might explore the capacity of our students for personalised learning and the challenges they might face with self-regulation in more open-ended learning environments. This leads to questions of how we equip students to be more effective digital learners, particularly when the learning environment may be more rather than less generic (eg., through MOOCs). We might also address questions of how students' knowledge, skills, interests and inclinations shape the ways they interpret technology-based tasks and set about completing them.

Conclusion

The call for a sociology of educational technology is not a new one (eg., see Kerr, 2004), but it has started to gain traction in recent years with more studies specifically employing sociological frameworks in a field previously dominated by research founded in educational psychology (Jones & Czerniewicz, 2011). This newer avenue of research is bringing insights into the technology-related dispositions, values and experiences of student as they move through their worlds, helping us to see education in context of the rest of their lives. This type of research, grounded in a social practice perspective, also reveals the relationships between social networks and structures that mutually shape how technologies are integrated and perceived in higher education by staff and students. This is an important emerging area of endeavour that, as it develops further, will offer a valuable adjunct to the established tradition of educational technology research.

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