Students' technologies in practice –a participant perspective of mobile IT in higher education

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Abstract. We argue that the availability and penetration of mobile technology in society in general, and among young persons in particular, have consequences for how students employ IT in educational settings. This paper is an exploration of what it means empirically, analytically and for design to take the use of technology introduced by students, rather than by teachers, in their learning activities, as a starting point for research on IT and learning.

1   Introduction

At the moment we see how ownership of mobile and networked devices is increasing. As a consequence, this increases the potential for students to bring their own IT to educational settings. The possibility of bringing your own smartphone or laptop greatly increases the possibilities to personally define and design the use. We argue that the availability and penetration of mobile technology in society in general, and among young persons in particular, have consequences for how students employ IT in educational settings.

The proposed focus contrasts a large body of research on the use and design of IT for educational purposes. Instead of putting learning at the focus of attention, we pay interest in the technology in action (Heath & Luff, 2000) conducting empirical studies "...concerned with the analysis of how tools and technologies feature in social action and interaction..." (Heath, Knoblauch, & Luff, 2000, p. 306). Also Orlikowskis is advocating a practice lens in studies of technology in organizations. She suggests the term technology-in-practice:

"… it may be termed a technology-in-practice, to refer to the specific structure routinely enacted as we use the specific machine, technique, appliance, device, or gadget in recurrent ways in our everyday situated activities." (Orlikowski, 2000, p. 408).

Substantial efforts have been made during the past decades to push IT into educational settings. The reasons given for designing, or employing new technologies are often to enhance and support students' learning. Multi billion dollar projects in North America, Europe and parts of Asia have been initiated and developed (Selwyn, 2000).

The motivations for such investments can be debated. The arguments are often based on that IT "... is equated with the modern world, economic success and the future; so schools must embrace the technology" (Watson, 2001). In Wellington's (2005) overview of the debate of IT in education he identifies three main arguments: Firstly, a vocational argument: we need IT in schools to prepare students for the future, IT-intensive, work. Secondly, a pedagogical argument: IT can be a catalyst for, and support learning, and better design provides better possibilities for learning. And finally, a societal argument: access to, and knowledge of how to use IT is a precondition to be able to take part in society. There seem to be several reasons why educational institutions should incorporate IT, but still little discussion is dedicated to issues of who is involving IT and how the participants use IT in educational practices.

As a result, also the methods for studying mobile-IT-practices have to be adapted. Historically studies have focused on field experiments where one new technology has been introduced by the researcher. Such experiments where new technologies are introduced and evaluated with the purpose of changing the future practice also become an easy target for criticism. Evaluations of experimental initiatives introducing IT point to a very limited transformation of educational practices (Cuban, 2001). It is also inherently difficult to predict any future use of based solely on the properties of a particular technology as expressed by Robey & Sahay: "… showing how nearly identical technologies occasioned quite different social meanings and consequences in comparable organizational settings." (Robey & Sahay, 1996, p. 108). We see this as a call for more inclusive and practice based views in research on tools employed in educational practices. It is essential to conduct studies of day-to-day use of IT to understand the consequences of the use and to be able to wisely implement technology in such settings (Selwyn, 2000). Experimental studies focusing on the introduction of new technologies certainly have a place, but we also need to look more into the non-experimental, routine and present use of technology among students. The efforts in developing new technologies for learning must thus be accompanied by research on technology already used in practice.

This perspective demands understanding students as practitioners. This means recognizing "being a student" as a sustained practice in its own right. What we are talking about here are students in the academic sense. Quite understandably studies investigating aspects of education as a social practice have been emphasizing, and highlighting, potential, or lacking, connections between educational practices and work practices. .

Attempts at changing education with IT and developing educational practices with IT has proven challenging to developers and researchers, and the results of the efforts are rarely impressive. We propose that one plausible explanation for the distance between vision and outcome is that in studies with focus on technology and learning, students rarely are described or understood as participants within a community of practice. In summary, research exploring the design and understanding of IT and technological change within social settings emphasize the importance of understanding the technology as part of a practice, and focus on that practice in efforts of change. At the same time research repeatedly disqualify the practice of being a student as an authentic practice in its own right (see e.g Lindroth & Bergqvist, 2010 and Lundin et al 2010 for notable exeptions).

In this paper we argue that research on IT in education mainly have disregarded and ignored the fact that students themselves introduce and employ IT in their educational activities. Alternatively, we suggest a focus on the student educational activities as a practice in its own right. Investigating the particulars of how students include mobile and ubiquitous hardware and software in their educational activities. We are not exclusively interested in what is taught or learned with IT, but rather in how the students employ these tools in practice. The proposed point of departure also removes teachers from the main focus and brings to front the students as co-producers of educational practice (Clark et al. 2009).

Methodologically, we suggest that the collection of empirical material on students' IT in use should be based on first hand studies of what they actually do. In the examples we have demonstrated the value of an interest in students' social practices, to be able to understand IT in higher education. When engaging in research on technology use in higher education, what we might interest ourselves in, find, see and change, will be inherently dependent on what practice we are investigating, the practice of teachers, or that of students.

Looking at the practice of students, rather than at the practice of teachers, or teaching, affects what is interesting, how it should be studied, and the design of IT support. Instead of defining the study by the technologies implemented by the teachers, for learning purposes, we look at which digital resources the students mobilize to get the job done. Consequently, it will be possible to explore how this use of IT might be connected to educational activities, and further more interestingly, how it relates to and shape learning. This can then be the starting point for discussions on the presence of particular technologies in educational settings. It could also feed a debate on the forms for engaging in lectures, examinations, group work, and other academic genres.

One way framing the suggested attempts of focusing students' technologies in action is to understand this as an attempt of taking the perspective of the students using different methods for collecting and analyzing data. Almost trivial might seem the very physical placement in the studied settings, placing the researcher in the back among the students and at the coffee-tables. Viewing the settings from the angle of the students (e.g. Lindroth & Bergqvist 2008).

However, methodologically, the main challenge is the change in analytical perspective. The mere statement that being a student is a practice in its own right, and the skills developed are not only (or even mainly) connected to future work, is provoking to some. Taking the student perspective mean to investigate what it takes to successfully complete the work of students. This is not only about learning, but also about getting good grades, having en pleasant time, enjoying the respect of co-students, i.e. all the aspects part of being a participant in a practice. It essentially would also mean to look at how bullying, cheating, and other less desirable aspects of being a student. Collecting empirical data on such activities might be difficult. Students know that they are supposed to be engaged in particular activities, which means that self-reporting or interviews might be quite misleading. However, there are numerous ways for collecting data that are not dependent on relying on users own understanding of what they actually do with their tools.

The shift could also possibly change the design of new tools for student work. If we

pay less interest in supporting teachers, and use less effort in building catalysts for learning, then more efforts can be put into supporting the work of students. As in all design activities the judgment of the designer will play a crucial part. If we are to decide what activities of the practice to support we might want to compare how such a support would align or conflict with the efforts of teachers, and the goals for learning. For example, are we willing to build systems where students will be more successful in higher education, but learn less? In other words, would it be suitable to make it easier, more convenient, or more efficient to succeed in higher education, without regarding what students are learning. Such a system would certainly raise more fundamental questions of the depth and authenticity of learning and knowing, as well as how knowledge are tested and assessed in education, which are beyond the scope of this paper.

In the table below we present some of the design paradoxes which we have been dealing with in our design work, attempting to engage in design aligned with the practice of being a student, rather than of being a teacher.

Design for teacher	Design for students
Support the learning of students	Support for the job of displaying something learned
Support for instruction in the best way	Supporting for dealing with and consuming instruction
Making teaching more efficient	Making the work of learning and displaying learning more efficient
Designs in line with the values and norms of teaching	Design aligned with values and norms of being a student
The prioritization of activities to support framed by education	The prioritization of activities to support the social practice of students
Evaluating designs by searching for causality between teaching, technology and learning	Understanding the success of designs by appropriation in social practices
Driven by looking at what teachers do	Driven by looking at what students do
Downstream interest teacher-student	Network of interactions among students and teachers

The paradoxes presented in the table could be criticized for giving an overly cynical picture of the two practices. Of course students care about learning, but ultimately only those who are able to produce valued externalizations of learning are successful as students. And of course teachers are not naïve to the extent that they don't understand that some of the important work of a student is to display valued externalizations of learning. However, the polarization is useful when trying to explore one whose behalf the designer is working, and push articulation of the values underlying the design work.

Finally, we want to stress that even though we propose the design for student practice design attempts should not be carried out on the expense of the teachers' practices.

Building IT support for students could even possibly allow for teachers to not become experts in the same components of IT use as the students. The "disharmony" in knowledge of, and interest in, how to use IT is often understood as one of the factors contributing to the failures of engagingly introducing IT in education (Selwyn, 2006). But if we remove the responsibility of introduction of IT from the teachers, they need not anymore be experts in the same sense. As it turns out, independent of the competence of the teachers, as well as of research attempting to show how IT might relate to learning, being a student (as well as a teacher) in higher education is a practice heavily based on the use of IT in various ways. Even though a structure for involving in educational activities is provided, the students are deciding what to bring, when to use it, and what to use it for.

2   References

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