

Chapter 96

The Activity System of Higher Education Students Using Technology

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ABSTRACT

This chapter presents a review of studies and reports of students' use of technology in higher education published primarily in the U.S. and Canada from 2005 to 2012. The review is conducted using an Activity Theory framework that organizes information from the literature according to the components of the activity system—subject, tools, object, norms, community, division of labour, and outcomes. The chapter concludes with a summary of the activity system and limitations of the approach.

INTRODUCTION

The previous chapter provided an overview of Activity Theory and the components of an activity system. In this chapter, we rely on the components of the activity system—subject, tools, object, norms, community, division of labour, and outcomes—to review the literature on higher education students using technology. The studies and reports of students' use of technology in higher education were published primarily in the U.S. and Canada from 2005 to 2012. Where possible, we also include studies from other geographic areas.

The chapter is organized into seven sections corresponding to the seven components of an activity system as follows: subject, tools, object, norms, community, division of labour, and outcomes. Depictions of activity systems typically precede and serve as the basis for the analysis of contradictions and the identification of opportunities for expansion of the system. Chapters 4 and 5 provide an overview of contradictions and opportunities for expansion; therefore, this chapter focuses solely on the depiction and illustration of the activity system with its seven components.

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The subject of an activity system is the individual or group whose viewpoint is adopted in the analysis (Engeström, 1990). Higher education might include the perspectives of individuals such as instructors, students, staff, designers, or the administration. However, for the purpose of this chapter, and throughout this book, we have narrowed our scope to the perspective of the students.

Tools refer to the “how” of the activity system (Wuori, 2009, p. 37), enable us to “get the job done” (p. 37), and mediate the object of activity. This entire chapter focuses specifically on the tools or, as they are also referred to, the technology or technologies that students use to learn. For this reason, each of the components that we describe in this chapter has a focus on tools. For example, when we describe the activity system of students, we are interested in students who are using technology as part of their learning. Thus, we do not include enrollment statistics in general but, instead, focus on enrollment statistics in online and e-learning.

The object is the fundamental “why” of the system (Wuori, 2009, p. 38), the focus of the activity, and what gives the activity its determined direction (Leont’ev, 1978). It is the “ultimate reason” behind various behaviours of individuals, groups, or organizations (Kaptelinin, 2005, p. 5). Given that our focus is on technology in higher education, when we report on the object, we are interested in why students are using the tools. For example, why do students enroll in online versus face-to-face learning? The community refers to those “who share the same object of activity” (Engeström, 2005b, p. 164), such as the individuals in a classroom, when considering a traditional setting.

The division of labour refers to the division of tasks, roles, power, and status among members of the community (Kuutti, 1996). It refers to the role played by individuals, the power they hold, and the tasks for which they are responsible (Bellamy, 1996). In relation to technology, we report on how students’ tool use affects the control and independence or lack thereof in their learning and the degree to which students self-regulate their learning as a result of using the tools of the Internet and computers. Norms are “explicit and implicit regulations” (Engeström, 1990, p. 79) or “customs, guidelines, and standards” (Worthen & Berry, 2006, p. 127). They may simultaneously constrain and guide activity (Jonassen, 2000a). When we describe the norms, we do so with a focus on how the tools are used, i.e., what are the conventions around tool use?

When considering learning activity in an educational context (e.g., a course), as Russell and Yañez (2003) observed, the activity system produces outcomes, in the sense that “people are potentially different when they leave, one way or another, individually and perhaps collectively” (p. 339). There can be unintended outcomes when focusing on educational settings, such as, among others, possible dissatisfaction and failure in examinations (Morgan, 2008). We report specifically on outcomes related to students’ technology use.

SUBJECT

Empirical evidence supports claims about the widespread use of technology among young people, but these claims need to be considered with caution regarding the impact of students’ technology use, in particular in learning, as well as the differentiating personal characteristics of this generation of students, compared to previous ones (Bennett, Maton, & Kervin, 2008; Bullen, Morgan, & Qayyum, 2011; Lohnes & Kinzer, 2007; Jones, Ramanaua, Cross, & Healing, 2010; Schulmeister, 2010; Selwyn, 2009; Smith, 2012; White & Le Cornu, 2011). Research conducted with incoming university students in Australia showed that there was diversity among them in terms of ability, access to and use of technology (e.g.,

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