Chapter 6
Towards an Activity–Driven Design Method for Online Learning Resources

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ABSTRACT

In this chapter we focus on the challenges we have encountered in the development of an activity-driven design method for online resources in an education programme for school leaders. The study is part of a follow-up research of the Digital Leadership Project (DLP) at the University of Oslo. The design method is experimental and grounded in Cultural-Historical Activity Theory (CHAT). The study can be seen as a contribution within CHAT in terms of moving from the current use of CHAT as simply a descriptive evaluation tool between analysis and design or design and redesign towards a more developmental model. The study addresses the research problem of interrupting an existing education course design with new technologies and learning objects/resources to try to bridge the gap between different designs for learning. This research contributes to the understanding of how the interplay between cultural artefacts, such as pedagogical ideas, design methods, and technological solutions in a design activity can influence solutions and lead to tensions, which create opportunities for the transformation of the design as a whole.

INTRODUCTION

The process of designing for activities in virtual communities supporting professional learning is consonant with the classical rationale of teachers’ planning of everyday teaching: to define, interpret and activate a curriculum object, to make directions for students’ work, and to concretise learning tools, activities and timelines of work (Beetham & Sharpe, 2007). In the process of implementation this conceptual design for teaching and learning has to be tested against practices embedded in
classroom structures and traditions, and the history of the school as an organisation. The purposeful follow-up action of students’ learning involves knowing how different institutional levels of design interact and direct learning processes and outcomes (Luckin, 2010; Lemke & Sabelli, 2008; Arnseth & Ludvigsen, 2006).

In this chapter, we present the Digital Leadership Project (DLP) and discuss an activity-theoretical model for designing a set of digital learning resources to be implemented in a study course for school leaders. We describe an inquiry-oriented design process attempting to model technology-enhanced learning activities in between existing structures and practices of learning framed by face-to-face activities and a virtual management system for learning. Specifically, the study addresses the evolutionary process of a design model bridging practices across levels of technology and pedagogy.

The study is highly influenced by a socio-cultural perspective and particularly Cultural Historical Activity Theory (CHAT) articulated by Engeström (1987, 1999, 2007), and we apply CHAT in two different ways: First and foremost as a lens to analyse how different mediating tools, objectives and social organisation influence designs for learning (cf. approaches by Beetham & Sharpe, 2007; Hauge, Lund, & Vestøl, 2007), which are embedded in a complex social practice. Secondly, we contribute to the CHAT community and design approaches by illustrating how CHAT in this study was used as a developmental model in the actual design phase rather than just as a descriptive evaluation tool between analysis and design or design and redesign (cf. studies by Jonassen, 1999; Mwanza, 2002; Kaptelinin & Nardi, 2006).

With CHAT as an analytical framework we can trace how the actual design team draws on different tools and resources over time when modelling the digital material in the course programme. By analysing what they produce (minutes, sketches, documents, course material), we see how approaches to the design of digital learning resources are transformed and given new meaning by the use of activity theory. Thus, two research questions are formulated for the study:

- What are the mediating tools that influence the design of the digital learning resources in the school leadership programme?
- What characterises the activity-driven design method and its relation to the prevailing designs for learning in the programme?

THEORETICAL ASSUMPTIONS

In conceptualising the making of the DLP resources, we draw on perspectives grounded in Cultural Historical Activity Theory (CHAT) articulated by Engeström (1987, 1999, 2007). Activity theory originates from the socio-cultural and socio–historical theories of Vygotsky (1978), Leont’ev (1978) and others. As the theory is deeply dialectical, contextual and historically oriented towards practices, their objects, mediating artefacts, and social organisation (Cole & Engeström, 1993), it provides a powerful lens through which to describe the complex social practices that arise within such a hybrid learning environment as that presented in the current school leadership programme. For the purpose of this study it is essential that the theory can be applied as an analytical framework for understanding the historical and contextual constraints of the DLP design and as a step-stone for the design modelling.

While activity theory has been used to study information systems design and development (Barab, Schatz, & Scheckler, 2004; Greenhow & Belbas, 2007; Hewitt, 2004; Kuutti, 1996, 1999; Jonassen & Rohrer-Murphy 1999), the research on how it can be used for design purposes is still a field of experimentation. However, in the theory tradition of Leont’ev and Engeström focusing on collective and object–oriented activities in complex environments, the contextual perspective gives a strong framework for sorting out signifi-