Chapter 2
Design-Based Research as a Methodology for Studying Learning in the Context of Work:
Suggestions for Guidelines

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ABSTRACT

This chapter presents a suggestion for design-based research (DBR) as a methodology for organizational studies. Although DBR was developed for investigating classroom training, this chapter discusses the methodological issues that are involved when DBR is employed for investigating learning in the context of work. DBR seems to be suitable in this complex context as it is an authentic learning environment. The purpose of this chapter is to provide new perspectives on DBR, including suggestions for guidelines regarding how to conduct DBR for studying learning from experience in the context of work. The research question is: What is needed to utilize DBR to explore learning from experience in the context of work? The theoretical framework is based on Yrjö Engeström and John Dewey's work on learning, and the exploration of DBR is based on a literature review and findings in a seven-year DBR study on learning from experience in the context of work.

INTRODUCTION

There is growing evidence that organizations produce superior results when they facilitate and support learning within the organization (Aktthar & Khan, 2011; Holsapple & Wu, 2011). Consequently, it is important to find methodologies that focus on learning in the context of work. "Learning from experience in the context of work" refers to situations in which employees learn from their practices, as opposed to learning from courses or work-related texts. Rather than improve competencies in defined courses,

employees should improve products, services, and work practices (Brandi & Elkjaer, 2011) to improve business results, competitive advantages, and revenue (Nonaka & Takeuchi, 1995).

This chapter explores design-based research (DBR) as a methodology for studying learning from experience in the context of work. This is a new setting, as DBR was developed to study learning in educational settings (Anderson & Shattuck, 2012; Andriessen, 2007; Brown, 1992; Dede, 2004; Design-Based Research Collective, 2003; Kolbaek, 2017; Wang & Hannafin, 2005).

The research question is as follows: What is needed to utilize DBR to explore learning from experience in the context of work?

The chapter is structured as follows: First, "learning from experience in the context of work" is examined, based on John Dewey's (Dewey & Boydston, 1976) explanation of learning from experience and Engeström's view on learning in the context of work (Engeström, 2001). Next, Kolbaek's (2014) educational design for learning in the context of work is briefly presented. Then, DBR is presented in its original format, followed by the research setting and four iterations in the development of the educational design of Proactive Reviews (PRs). The analysis focuses on the weaknesses of DBR when utilized in the context of learning from experience in the context of work. The analysis leads to suggestions for new guidelines for DBR as a methodology for studying learning from experience in the context of work. The suggested guidelines are called "DBR at work." Finally, the conclusion presents theoretical, methodological, and practical contributions from this study.

BACKGROUND

Authors use different terms to describe DBR, including "design research," "development research," "design experiments," and "design studies" (Anderson & Shattuck, 2012; Andriessen, 2007). However, this chapter only will use the term "design-based research" (DBR), which was introduced by Ann Brown in 1992. DBR is different from Design Science Research (DSR), which focuses on the design of objects, processes (making and using objects), and reflection and evaluation of object design (Winter, 2008). The "object" of DBR is "learning" in the classroom, as DBR is used for solving educational design problems, not design problems in general (Collins 2010).

DBR is not a well-defined methodology; rather, it is a combination of processes leading to knowledge about learning designs, in the form of qualitative and quantitative data (Collins, Joseph, & Bielaczyc, 2004). Wang and Hannafin (2005) define DBR this way: *"DBR is a systematic, but flexible, methodology aimed to improve educational practices through iterative analysis, design, development, and implementation, based on collaboration among researchers and practitioners in real-world settings, and leading to contextually sensitive design principles and theories"* (Wang & Hannafin 2005, p. 6).

According to Zheng (2015), there is a lack of long-term DBR studies that include several iterations of intervention on educational designs. This chapter includes a longitudinal DBR study of learning from experience in the context of work that follows four iterations of an educational design called Proactive Review.

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