Learning between projects: More than sending messages in bottles

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Abstract

Although learning from projects has gained much importance in research and practice, progress in understanding and improving inter-project learning appears to be slight. We argue that the adoption of a sender/receiver approach limits the learning effectiveness in project-based organisations. Drawing upon the notion of learning as a social activity embedded in an organisational context, we develop the argument that learning from projects takes place within projects rooted in the historical, organisational and cultural context of previous and current projects. We underpin our argument with results from a multiple-case study on learning in construction organisations. We show that learning cannot be segregated from immediate practice and occurs when individuals engage in project work. Particularly the orientation towards project goals and project-overarching ambitions or trajectories can serve as contextual binder for learning in and between projects.
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1. Introduction

For more than a decade, learning from projects has received much attention in practice and research. Driven by the intention to improve the performance of project-based organisations (e.g. in construction, aerospace, motion pictures) numerous studies have been conducted to identify barriers and enablers for learning from projects (e.g. Holzmann, 2013; Kumaraswamy and Thorpe, 1996; Shokri-Ghasabeh and Chileshe, 2014; Swan et al., 2010). Yet despite the efforts made, progress in improving the learning from projects appears to be slight. Project-based organisations seem to be caught in the learning paradox of projects (cf. Bakker et al., 2011). Due to their fluid, temporary and interdisciplinary nature, projects are seen as suitable organisational units for stimulating learning and creating knowledge (Ayas and Zenuik, 2001; Edmondson and Nembhard, 2009; Schindler and Eppler, 2003). However, it is also argued that the ephemerality and discontinuities of projects restrict the assimilation of the created knowledge by other organisational units and its enhancement over time (Bresnen et al., 2003; Swan et al., 2010).

Besides identifying problems and difficulties in cross-project learning, previous studies investigated a number of tools for extracting and disseminating lessons learned such as post-project reviews, company intranet or face-to-face meetings (e.g. Maqsood et al., 2006; Koners and Goffin, 2007; Newell and Edelman, 2008; Paranagamage et al., 2012). The majority of these studies, often implicitly, adopt a sender/receiver perspective on learning which assumes the possibility of engineering communication channels for transferring knowledge between projects and "lubricating their operation with the proper tools and motivated context" (Kasper et al., 2013, p.334). We argue that particularly this core assumption that knowledge is a transferrable commodity accounts for the little observable progress in understanding and enhancing project learning activities. To be clear, we do not reject the sender/receiver approach, but we argue that within the contextual boundaries of project-based industries the sender/receiver conceptualisation of learning has its limitations and calls for alternative approaches.

Drawing upon the notion of learning as a contextually embedded social activity, we propose such an alternative approach.

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Although the social and situated nature of learning has received much attention in research on knowledge creation in organisations and projects, its role for the learning between projects is less understood. Clearly, many previous studies revealed the importance of social interaction and processes for the knowledge transfer in project environments (e.g. Paranagamage et al., 2012; Roth, 2003; Wiewiora et al., 2013). However, from the perspective of these studies, social interactions are still channels or tools for the transmission of knowledge between one individual/project (sender) and another individual/project (receiver) (Noorderhaven and Harzing, 2009). Contrary to the sender/receiver perspective, we regard social interactions as contextually embedded and collaborative efforts in projects from which learning occurs. From our point of view, learning across projects takes place within projects as a social activity rooted in the historical, organisational and cultural context of previous and current projects (the imperative of continuity). We specifically argue that the goal orientation of project-based activities can and should serve as a contextual binder between projects, giving the social interaction within projects focus and orientation for the learning from projects.

In the following we develop our argument based on the project-based and situated learning literature. By referring to the results of five case studies on learning from projects in construction organisations, we then intend to juxtapose the effectiveness of the sender/receiver approach and social learning approach for learning from and between projects. Based on that, we discuss the limitations of transferring lessons learned and the goal-oriented learning from projects in projects. We also address practical implications and the limitations of our research.

2. Conceptual background

2.1. The sender/receiver approach of learning

The sender/receiver approach of learning is based on cognitive learning theory that describes learning as an individual's acquisition of abstract and general knowledge delivered by knowledgeable sources (e.g. books, experts) and changing the mental models of the individual (Elkjaer, 2003). It is much connected with the view of knowledge as an "objectified transferrable commodity" (Gherardi, 2000, p.213) which can be extracted from individuals, exists independently from context, can be stored in repositories and transferred to other individuals. Knowledge production, transfer and consumption become autonomous activities with the transfer of knowledge as central activity for learning to occur.

The transfer of knowledge implies the existence of source, channel, message, recipient and context (Liyanage et al., 2009; Noorderhaven and Harzing, 2009). It is argued that it depends on the characteristic of the sender unit, receiving unit, relationship between sender and receiver, and the knowledge transferred (Joshi et al., 2007). Given certain conditions, knowledge will flow from one unit (individual/project) to another unit (individual/project). These conditions are (Lin et al., 2005): (1) the sender unit is knowledgeable and willing to share its knowledge, (2) the receiving unit possesses the capacity to absorb the knowledge,

and (3) the appropriate transmission channels between sender and receiver for the flow of knowledge exist. Transmission channels are appropriate if they allow the development of a common lexicon between sender and receiver that "sufficiently specifies the differences and dependencies of consequences at the boundaries" (Carlile, 2004, p.558).

The sender/receiver approach relies to a great extent on the storage, retrieval and transfer of explicit knowledge that can be codified and reverts to transmission channels such as electronic and document-based repositories. It also acknowledges the existence of tacit knowledge that is intuitive and unarticulated (Lam, 2000), but can be converted into explicit forms to make it transferrable (Nonaka and Takeuchi, 1995). For example, social interactions in meetings or face-to-face conversations are seen as channels for the externalisation of tacit knowledge and the transfer of this knowledge from an organisational unit that has the knowledge to another unit that does not have it (Kasper et al., 2013).

The notion of transferring knowledge appears to be appealing, since many studies on learning from projects adopted the sender/receiver approach and investigated the effectiveness of channels for the transfer of knowledge and lessons learned between projects (e.g. Koners and Goffin, 2007; Koskinen et al., 2003; Schindler and Eppler, 2003). At the same time, barriers of knowledge transfer are well documented. Reported problems include lack of time and resources to capture lessons learned (Keegan and Turner, 2001; Shokri-Ghasabeh and Chileshe, 2014), lack of usefulness of captured knowledge (Chua and lam, 2005; Newell et al., 2006), focus on failures (Carrillo, 2004), lack of purpose (Storey and Barnett, 2000; Ruikar et al., 2007), and commitment of staff and management to knowledge sharing initiatives (Bishop et al., 2008; Williams, 2008). We argue that these barriers represent major limitations rather than unresolved problems for the learning from projects. The prevalent production structure, business paradigm and management style in project-based industries evoke these limitations. For example, lack of time can be traced back to the very limited ability of project-based firms to balance demand fluctuations (through e.g. stock-keeping or creating markets for their services). Since it is the demand that directly determines the utilisation of resources, people are often involved in several projects with their own milestones and deadlines and, consequently, face time pressure (Sydow et al., 2004; Swan et al., 2010). As a response to a changing demand rate, services, technologies and equipment are often outsourced and subcontracted per project. Many project-based firms follow a business paradigm of trade rather than production and are technology-wise empty firms, which makes it difficult for them to define a clear purpose for learning from projects (Dorée and Holmen, 2004). In addition, many projects not only entail a variety of components and equipment, but also have to process a wide range of technical, legal, environmental and organisational information that, to some extent, varies within and between projects. This makes it questionable whether a sender project is able to articulate the knowledge that might be of value to a future, but yet unknown receiving project and to generalise lessons learned to an extent that makes them digestible but still useful for several receiving projects (Bresnen et al., 2003; Swan et al., 2010).