

Studying Task Transfer in Workplace: Distribution of Interaction among Human, Artifact, and Context

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Abstract. Task transfer in organization requires an experienced colleague to transfer job-related knowledge and experiences to another employee. This process can be tedious and resource consuming. My doctoral research aims to explore and gain deeper understanding about the nature of task transfer at the interaction level. I propose a triangular relationship among human, artifacts, and context during task based on the theory of distributed cognition. A preliminary coding scheme is built for exploring the distribution of knowledge during task transfer. Present result shows that knowledge is distributed among human, artifacts, and the working environment, rather than being centralized in one location. In my doctoral research, I aim to develop a framework to delineate the space of research, and provide theoretical and design implications for knowledge transfer in workplace.

Introduction

In organizations, task transfer is prevalent, and it requires knowledge and experience of performing a specific task being transferred from skilled workers to naive learners. This transition process is time consuming and resources demanding. When an experienced worker leaves his/her job, it takes time and resources to train a new employee to gain the mastery of the experienced one's job skills, such as handling exceptions or gaining efficiency (Hinkin & Tracey,

2000). These studies outline a critical role for understanding and enhancing task transfer in workplace.

My doctoral project sets out to investigate task transfer among individuals, work context, and their relationship with artifacts, trying to extend the understanding of task transfer at a micro level relates to interpersonal and human-context interactions. According to the theory of distributed cognition established by Hollan and Hutchins (2000), which states that cognitive process involves coordination between human mind and external objects around the environment, as well as distributed across minds of individuals among a social group. I argue task transfer is a triangular human-artifact-context interactive process. Knowledge regarding the task is not only inside individuals' mind, but also outside of their mind, embedded within the work environment and context.

The specific objective of this doctoral research is to understand the interaction between task transmitter (senior employer) and recipient (junior employer) by taking interpersonal interactions as the unit of analysis. By employing a combination of qualitative and quantitative data analysis, a framework of task transfer is expected to be developed, and theoretical implications will be discussed.

Related work

Extensive research has focused on understanding task transfer from interpersonal perspective, studies have shown that informal learning, for instance, mentorship, storytelling, or peer learning, is beneficial for newcomers to acquire experiences from experienced colleagues (Swap *et al.*, 2001; Suzuki *et al.*, 2016). Newcomers with mentors were able to learn more about organizational norms and practices compared to those without mentors (Ostroff, & Kozlowski, 1993). A case study done in Google also revealed that peer-learning and collaborative learning practices for new software engineers can enhance employees' job satisfaction and collegiality (Johnson, & Senges, 2010). It can be explained that newcomers may acquire knowledge by observing their mentor performing tasks within the context of social interaction (Bandura, & Walters, 1977). In other words, learning does not occur by learners themselves, but rather, depending on their interaction with role models in particular situation.

In the view of distributed cognition, studies of cognitive anthropology focus on the role of artifacts plays in a real-world practice. Hutchins argued that cognition is situated "in the wild" instead of merely "in the head" of an individual. Individual's cognition can be distributed internally and externally in the surrounding to support human information processing for completing a task (Hollan, & Hutchins, 2000). Task transfer in organization is different from learning and teaching in classroom, it occurs in workplace with certain settings in particular. Together, task transfer in organization can be viewed as a socio-

cognitive learning process, and the artifacts distributed around the workplace may involve in the process of task transfer.

In this doctoral project, I aim to conceptualize and examine the nature of task transfer between experienced and inexperienced workers from two aspects: what role does knowledge play in task transfer and how does interaction activities involve in the context of task transfer?

Methodological approach

A cumulative case study mixed with quantitative approach was adopted to gain a detailed understanding of task transfer in workplace. Seven informants from different occupation were invited to share their experience on task transfer,, including transferring tasks to colleagues, receiving tasks from colleagues, and activities during task transfer. Every interview last about one hour, and the interview results were all transcribed for further analysis.

Current status and next steps

Knowledge is distributed in the mind, artifact and context

For the preliminary analysis, a coding scheme was built to understand the distribution of the proportion of where knowledge was embedded in. Based on the theory of distributed cognition, we hypothesized that knowledge is distributed among one's mind, artifacts, and context. Thus, four main labels were created, knowledge in the mind, in the artifact, in the context, and others. Dialogues regarding task transfer were selected, and each of informants' utterance was labeled as one of the four labels. Preliminary result showed that the distribution of knowledge in the mind, artifact, and context is in average 24%, 23%, and 19% for each category (Figure 1. Distribution of knowledge).

For next steps, an inductive free form analysis with a focus of interpersonal interaction will be adopted. A cumulative case study combined with grounded theory (Glaser, 1978; Glaser, & Strauss, 1967) will be adopted to understand task transfer.

Expected contributions

This doctoral study aims to understand the nature of task transfer in workplace, especially focus on the interaction level. This line of work will deepen our understanding of task transfer by considering the interaction among minds, artifacts, and context, and advance our understanding of knowledge transfer beyond individual level and organizational level. Further, this doctoral work

could provide design opportunities and theoretical implications to advance the understanding of knowledge transfer.

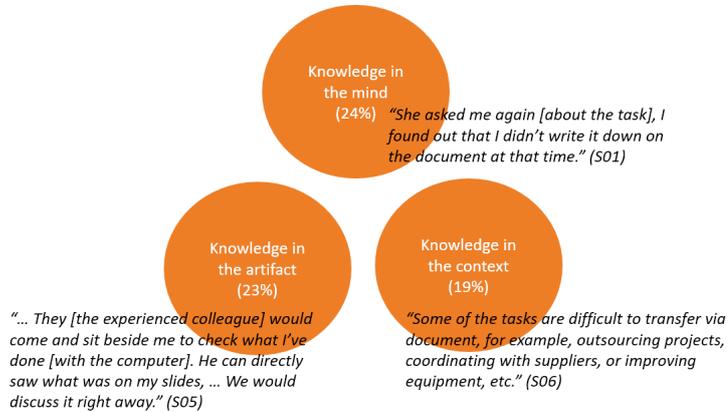


Figure 1. Distribution of knowledge. The result suggests that during task transfer, knowledge is embedded not only in the experienced worker's mind, but also distributed in the artifacts and working environment as well.

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