Learner as Designer: theoretical approaches to learning and design

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Abstract
Recently so-called eLearning 2.0 has shifted the image of learning from a mental construction of meaning and knowledge to a creative activity that involves the transformation, design and management of external resources. The focus of research in this area is on the social processes between learners and their communities of practice in their production of meaning (Wenger 1998). Such processes and activities, including writing, can be seen as ‘designerly’ particularly where students work at achieving their ends using material and conceptual resources in their surroundings. Embedded in the discourse of the “practice turn” (Reckwitz 2002), design research may help to understand how learning activities are structured through the mediation of artifacts. A framework that takes into account the learner not only as user but also as an everyday designer may also play an important role in the development of new tools for learning processes and outcomes. Such a reframing of learning practices requires a commitment to existing socio-cognitive theories

The cognitivist approach to learning acknowledges the active processing of external resources, which is most obvious in the concept of discovery learning (Bruner & Anglin 1974), and generative processes are understood as supportive for memorization (Wittrock 1974). However, in the cognitive tradition in general creation and modification of external resources are considered as secondary traces of cognition (Winne & Hadwin 1998). Constructivist approaches—a contradictio in adjecto—show some interest in learners’ material constructions, preferring to focus on the individuals interactions with external resources as a construction that can be facilitated in learning. The concept of Distributed Cognition tries to overcome the blind spot when it integrates external resources into cognitive processes (Salomon 1993). Within this view external resources may structure, offload, and distribute cognitive processes. While Distributed Cognition opens an important perspective on the material world, criticism has been articulated on the static notion of the described cognitive processes (Kaptelinin & Nardi 2006). Learning of course is a dynamic activity that changes with every step the learner makes. Here is where Activity Theory as developed by Vygotsky (Wertsch 1985) and Leontiev (1978) enters the stage with its immanent developmental view on activity. Activity is understood as a goal directed act that is mediated by tools (Engeström, 1987). This understanding is often represented by a triangle relating subject-object-tool. With Activity Theory it can be argued that tools are used and designed in the process to accomplish the goal of learning. Activity theory, now a popular framework for interaction design, leads to a consideration of learning activities as designerly.

One area of design research is the successful demystification of the design process (Lawson 2006). Although repeatedly authors (Papanek 1985; Thackara 2006) claim design to be a fundamental human activity, research mainly has contributed to the professionalization of design. The fields of Science and Technology Studies and post-cognitivist Human-Computer interaction both deconstruct the concept of use and the user as a wishful projection in the development process. Ethnographic research has revealed the “mutual shaping of design and use” (Rohracher 2006) which finally also reconfigures the user. The user “finishes the design” (Vicente 1999) to accommodate technology into his everyday life. This everyday design is pervasive and seen as “the most authentic kind of designing” (Moran 2002). Recent ethnographic studies have been undertaken to better understand everyday design, demonstrating design-in-use that exploits the affordances of artifacts and the environment (Brandes, Stich & Wender 2008; Wakkary & Maestri 2008). Some aspects of everyday practices like task management and personal information management (PIM) which also occur in learning can be conceptualized in this way. The emergence of ephemeral everyday design in learning may be captured as “instrumental genesis”. This extension of Activity Theory splits up the tool in artifact and utilization scheme (Belguin & Rabardel 2000). It is only when a utilization scheme is applied on an artifact that tool use, instrumental genesis emerges. Within this framework it is possible to capture the learning process as a process where tools have to be designed to accomplish learning objectives. It is critical for the learner not only to design artifacts but also to find utilization schemes that make sense. As learners are constantly confronted with new challenges it can be argued that instrumental genesis and tool mediated activity have to occur in an ad hoc manner. With this theoretical approach, the importance of design in learning processes could be shown. It calls for further research that empirically grounds the claims.
Quantum entanglement: Practice-led research and the observer effect

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Abstract

The challenge of producing creative work in an academic environment is one faced by students undertaking higher degrees by artefact and exegesis. The aim of such practice-led research is to produce a creative piece that prompts research about the content and production, yet this process cannot be a pure one if it is conducted within an environment where every step is recorded and/or open to deeper scrutiny. The effect of observation on results is noted from fields as diverse as psychology and quantum mechanics, and is one that may have an unintended impact within the field of practice-led research. If this influence is inevitable, what does this mean for the creative artefacts produced within the higher education environment and their contribution to the knowledge in their fields?

References