

Design in the world AND our work

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Abstract: Design is a ubiquitous term in CSCL and the Learning Sciences, but neither discusses design methods in parallel to how design is represented in classical design fields. We examine the use of the word “design” in publications. On-going analysis explores published representations of design process at a finer grain size. We tentatively find a lack of *problem finding*, a scarcity of iterative design, and notions of customer needs in contexts are largely absent.

Issues Addressed and Potential Significance

Design as a term has been a significant part of the CSCL discourse since the first issue of ijCSCL (Volume 1 No 1 2006) with 308 references spread across 7 articles. This focus builds on the use of the term in issues of the Journal of the Learning Sciences (e.g. an early CSCL focused JLS issue - Volume 3 No 3 with 77 references across 4 articles). However, myriad forces conspire to distract us from taking design seriously; chief among these are notions that generalizability and scalability are the dominant goals of our work. These selective pressures lead us to seek overt and covert means to teacher-proof our designs for learning and to decontextualize our findings. Rather than presenting our design decisions in tandem with findings and descriptions of context, we tend toward abstraction, inferring design principles, which in practice may be applied haphazardly or incoherently. We note three ways to consider how we may or may not act as designers: design involves problem finding; design problems emerge from customer needs and/or user experiences; and that problems and solutions co-evolve as design work progresses.

Notions of *design* and in particular *design thinking* have gotten a foothold in the adjacent community of The Learning Sciences and beyond; for instance, in a recent *Review of Educational Research*, it is claimed that design thinking “can also have a positive influence on 21st century education across disciplines because it involves creative thinking in generating solutions for problems” (Razzouk & Shute, 2012, p. 331). Design thinking is valued by our communities as a means for solving “wicked problems” (Rittel & Webber, 1984). However, there is concern voiced from design fields regarding this infiltration of design thinking, in part because “an identification of design with problem solving and with strategies for change paints but half the picture” (Stewart, 2011, p. 516). One of the ways in which design problems differ from other types of problems, is that they tend to be ill-defined (Cross, 1982). A way to illustrate this is to consider how the design problem as given differs from the problem as solved, meaning that when the same design problem is assigned to fifty teams, there will not be “fifty solutions to the same problem” but, in important respects, “fifty different solutions to fifty different problems” (Harfield, 2007, p. 160). In this way, design problems and solutions are seen to coevolve (Dorst & Cross, 2001). Embedded in concerns about design thinking is the notion that design is simply problem solving; however, design from the design thinking perspective begins from *problem finding* activities undertaken by designers, who value the “need for more informed insight into user experience, especially in the context of rapidly developing digital technologies,” (Stewart, 2011, p. 516). We wondered, to what extent are our designs – be they designs for learning, software or research-- explicitly emergent from customer or user needs? To what extent are the problems being viewed as ill-defined? And finally do the solutions and problems co-evolve as the design work progresses. “Scholars do not usually ask: Who does the design benefit and why? This linear view is associated with notions of perfection, completeness, and finality” (Engeström, 2011, p. 600). Research questions focus on how the use of the word “design” has changed in the adjacent communities of CSCL and The Learning Sciences. In particular, we consider passive uses of the word design (“the activity was designed to engage”) and contrast these with more designerly (Cross, 1982) uses in relation to the journal, year, and topic. Further, we explore antecedents of design experiments and design-based research to better understand the myriad ways design --as a process-- is viewed in these communities of scholars. Ultimately our goal is to examine our layered uses of the term design and through this analysis to better understand it in terms of meanings and processes that exist outside of the CSCL community. By providing a better understanding of our various uses of the term design we anticipate the CSCL community may be able to consider where design and in particular design thinking could lead us in terms of our work.

Connection to Conference Theme

Our poster addresses the conference theme: “To see the world AND a grain of sand” by examining how design, as it has been used by the CSCL community, has become laden through the layered ways we have engaged in talking about it. When we zoom out-- *seeing the world*—the work in CSCL and The Learning Sciences appears to align with design; However, when we zoom in—*seeing the grain of sand*—references to design work diverge, with some researchers enacting strong design processes, and others omitting much of what being

designerly is about. Ultimately, we contend that design is not simply problem solving; it involves locating needs in the world, understanding them within contexts, working between the problem and solution towards a suitable solution. Our preliminary work in this area provides a beginning point for a renewed discussion about the nature of design as it has been presented in iJCSCCL and how these descriptions relate to the designerly ways that have been part of the discourse in the allied design fields.

Methodological Approach

We began our review by searching three journals: *Journal of the Learning Sciences* (JLS, 1991-2011), *International Journal of Computer Supported Collaborative Learning* (iJCSCCL 2006-2011), and *Design Studies* (DS 1991-2011) for the word “design.” We created a database of all sentences containing the word design, omitting only those that were contained within transcripts or in the references cited (e.g., a journal title). We then began an on-going analysis of uses of the word design (e.g., “X was designed to...” see Figure 1).

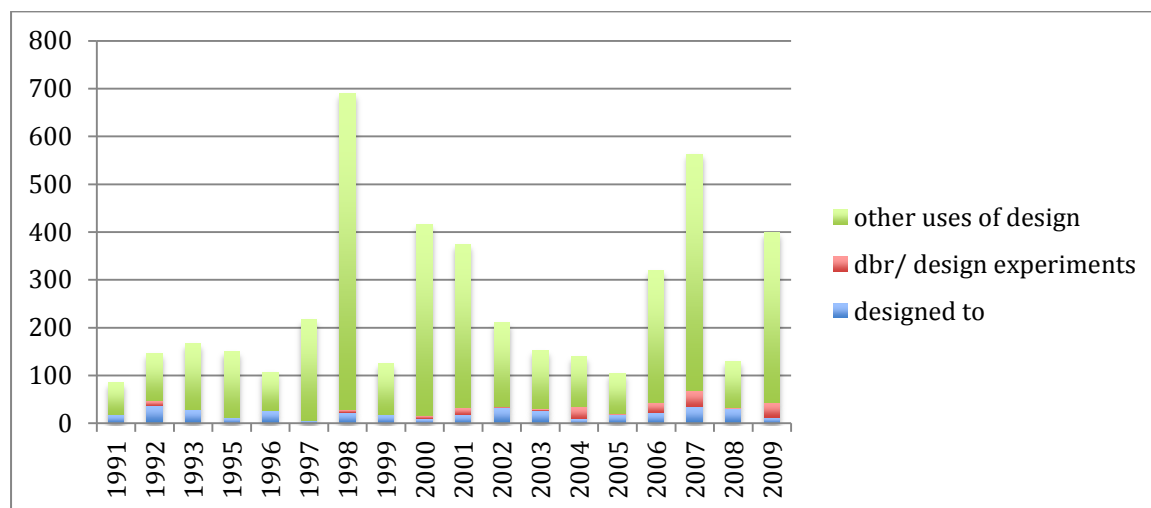


Figure 1. Uses of the word “design” in *The Journal of the Learning Sciences*

Major Findings, Conclusions and Implications

First, we infer that our current analysis continues to be incomplete, and has not been conducted at the right grain size. We conclude with next steps for our on-going analysis. First we plan to examine articles at a finer grain size, and with a particular focus on the relationship between iJCSCCL and JLS; we posit that the 2006 introduction of iJCSCCL may have impacted how design is presented in JLS. This issue is a current concern for these adjacent communities; for instance at the 2012 *International Conference of the Learning Sciences* (ICLS), an “open meeting of the CSCL community at ICLS” was held, and some attendees voiced concerns over their continued presence at ICLS. We wonder what might be lost – in terms of design capacity-- if these two communities were to further diverge. Disappointed by not having those features- what opportunities are missed by not having certain aspects of design in our process. In particular, we fear the *lore* of design as a fairly straightforward, linear process of problem solving will continue to dominate. Our communities are not talking about design in the ways reflected in journals such as *Design Studies*. There is a lack of visible iteration, and sparse reference to users or customers (perhaps because we find these terms abhorrent), but our initial analysis has yet to reveal a strong parallel for this role. We anticipate constructive discussions at CSCL 2013.

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