

Design as work – Developing a participatory, socio-technical approach to understanding HCI practice in the real world

john.knight@aalto.fi

Understanding practice, the doing of HCI design is popular area within the design research literature. The voluminous citations of Donald Schön's 'The Reflective Practitioner: How Professionals Think in Action' evidence this popularity. Schön's thesis is lightly supported by empirical inquiry. For example, a single, sample dialogue and interaction between an architect 'master' and 'student' (ibid, p.79) is referenced. Facets of practice studied via highly controlled and tightly constrained studies in 'Design Thinking' extend the scope of this kind of introspective inquiry (e.g. Lawson 2009). However, the supporting research lacks primary data. Beyond cognition (whether examined through introspection or empirical studies) design is not only a physical and mental activity but a social practice. It is also an activity that is integrated into the complex production of goods and services within the wider world of consumption.

Understanding the broader context of practice in all its richness requires extending the scale and scope of inquiry beyond highly abstracted problem-solving exercises or intellectual reflexivity. Frayling's (1993) research *into, through and for* design, Practice-based Design Research (Vaughan, 2017), and the cross-disciplinary approach of autoethnography (Duncan, 2004) go some way to address the theory-practice gap. The results are, however, still limited in their generalisability. In particular, these studies tend to be set in the educational domain and, as with design thinking research, are most often focused on the early stages of design.

Understanding the real-world of practice shifts the focus of inquiry out, to account for the full range of activities in which HCI designers are involved in. This broader inquiry frames practice not just as an abstract creative activity but as something people do for a salary in return for adding to an organisation's capital. Such 'accounts of practice' (Knight, *et al* 2019) are likely built on collaborative studies with and by practitioners combined with the rigour and generalisability of work studies in the socio-technical tradition of Trist. Accounts of practice findings should cascade up to contribute to theory building too. Connections to boundary theories are possible at a number of levels. First is the macro-level of the economy. Then there is work at the level of an applied area of social practice. At the lowest level – and the domain most thoroughly researched in the literature hitherto – is design as a product of human creativity. Too much contextualisation is a risk too; potentially determining the direction of theory toward a single pre-existing and overarching theory such as the political economy. Instead, a Ground-up Modular Theory approach was used which maintains the uniqueness phenomena at hand as well as linkages toward many proximal theories.

This critique suggests a need to both gather data of design as work and also to develop ways of understanding that phenomena, discretely so that the findings might, separately, connect up and into broader theoretical currents. Some research has been undertaken to develop an account of practice approach. In the first, (Knight, *et a*, ibid) a number of commercial HCI design projects were analysed in order to understand the nature of project work. The first project type was identified as 'strategic scrum' and related to large-scale software development projects, that followed a period of 'up-front design', roadmap and strategy definition. The second category was defined as 'tactical scrum' was more focused on short-term gain and alignment to the existing user experience, in some ways because it was delivered on a single technology platform. The last type of project was the

most commonly applied variant. This aligns with the common practice of ‘small change’ or ‘business as usual’. Not only was the focus on micro-level aspects of the product or service, but the nature of the work also meant that design work is a fractional part of a bigger, collaborative and ongoing activity.

In a second case (in press), a deeper account of practice was undertaken. The study aimed to expand the research method set and also deepen understanding of the felt nature of the work. A number of spotlight studies (n = 13) was conducted to explore structural aspects of work such as typical deliverables, timescales and roles. These studies typically involved relatively small cohorts (Mean = 32 participants) and typically involved surveys and workshops. Findings incrementally built towards an overarching structural framework that mapped to broader economic constructs (Knight, 2019). For example, precarious labour was validated as a factor within working practices. A strong theme in the research centred on practitioners’ stress when working in agile software development projects. This foundational work also uncovered other aspects relating to agency. Mostly, these human factors findings focused on marginalisation and problems in multidisciplinary team working.

In order to dig deeper into the felt nature of work a diary study was conducted with 30 participants including the author over four weeks. The study began by iterating and validating a set of emotional dimensions (initially identified in the early studies) that designers’ experience in their day-to-day work. The study then developed and checked the structural framework. In the third week, participants created a shared narrative describing their roles. In the final week participants kept a reflective diary. Ground up analysis mapped to Wilcock’s for dimensional occupational framework that consists of being, doing, belonging and becoming. This framework not only provides a conceptual mapping that is relevant to an account of practice study but also highlights the potential value of the approach in practically aiding practitioners to gain a balanced work experience. Further research will deepen the analysis of the current study and aim to build tools and methods to operationalise a grounded HCI design occupational health approach.

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