

Culture and (i)literacy as Challenges to Scandinavian Cooperative Design

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ABSTRACT

With the development in the global market collaborative user centred design becomes a competitive factor since successful diffusion and up-take of systems lie with the users. But users have different IT competences and are culturally different. These are challenges that collaborative design methodologies need to address. We describe the development within HCI through a general introduction to User Centered Design then focusing on the Scandinavian Approach. We argue that the Scandinavian tradition too is embedded in its specific cultural understanding and we discuss this by introducing the concepts of conflict and culture. In a final paragraph we return to the networked society, and reflect on the role of collaborative design.

ACM Classification Keywords

K.4 Computers and Society. Miscellaneous. J.4. Social and Behavioral Sciences

General Terms

Design, Collaborative, Scandinavian tradition, culture

INTRODUCTION

Addressing the process of globalization Castells [1] has described the transition from the industrial to the network society and the associated new societal structures through three dimensions. One of these dimensions is Informational: the capacity to generate knowledge and process information determine productivity and competitiveness. The general understanding is that a society meets the challenge when the citizens and employees possess the competencies of the self-programmable labour. In this development, ICT plays a constitutive role, because the development of a world-wide IT-infrastructure and a networked new form of organization have as a pre-requisite technical literacy among the world citizens. Hence five out of twelve factors that constitute the World Economic Forum's Global Competitiveness Index 2008-2009 are: Institutions, infrastructure, innovation, technological readiness and education.

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IT and (i)literacy

More than 50% of the populations in Pakistan, Nepal and Bangladesh are illiterates (in the traditional sense, they cannot read and write), in Burkina Faso, Sierra Leone, and Gambia it amounts to more than 60%, and in India it is around 42% of the population. UNESCO [2] works with a definition of literacy that includes IT as well as written, visual, and digital forms of collaboration, expression and communication. UNESCO's concept of literacy also includes cultural identity and stresses that literacy can be understood only within a wider social context. IT-literacy is defined as "the ability to identify, understand, interpret, create, communicate and compute, using printed and written materials associated with varying contexts. Literacy involves a continuum of learning in enabling individuals to achieve their goals, to develop their knowledge and potential, and to participate fully in their community and wider society" [2]. IT-literacy is to use digital technology, communication tools and networks to solve information problems and to think critically about information. It also includes abilities such as to use technology as a tool for searching, identifying, understanding, analyzing, creating, evaluating, organizing and communicating information.

In a Western context, design for technical illiteracy and cultural diversity is tied to the idea of universal usability [3] and universal access [4]. However, most common HCI methods are not capable of handling illiteracy problems or radical cultural differences – not even between designers and user [5].

In a Global Networked Society two challenges stand out:

- (1) Users come from different cultures and
- (2) Users come with different IT-competencies.

The question we ask is; How may we conceptualize collaborative design approaches so that they may better address issues of cultural difference and (i)literacy?

We address this question by describing the development within HCI through a general introduction to User Centered Design then focusing on the Scandinavian tradition. We argue that the Scandinavian tradition too is embedded in its specific cultural understanding and we discuss this by introducing the concepts of conflict and culture. In a final paragraphs, we return to and reflect on the role of collaborative design in the networked society.

COLLABORATIVE DESIGN

User Centered Design

User Centered Design (UCD) has evolved over time, from a narrow perspective based in software engineering psychology to a multidisciplinary approach with “a more cooperative effort to understand what it means to build systems that people value” [6]. There is a continuum of levels of representation of users in UCD – from direct involvement to model users and abstracted user roles such as those used in the UML development methodology for systems development or in Microsoft’s use of Personas. User centered design – though oriented towards the user, is hampered by understanding the user as an information resource – not as an equal partner in a collaborative effort [7]. UCD has many faces and it is the perception of the user, and the degree and depth with which users are involved in design projects which differentiate UCD approaches from each other. The Scandinavian approach builds on an understanding of the user as equal partner and expert collaborating with other experts (graphic designer, system developer, HCI designer etc) throughout the process. It is this perception of the user which distinguishes the Scandinavian traditions from other UCD approaches. This approach carries potential when addressing illiteracy and culture, because it gives voice and space to the user. However, the Scandinavian approach too is embedded in its specific cultural understanding

The Scandinavian Approach

The Scandinavian approach, which has evolved over more than 30 years, has direct collaboration with the user throughout the process in its core. The aim has been to give users a voice, and at the same time enhance the quality of the resulting system [8]. The Scandinavian approach is deeply founded in Scandinavian (welfare) culture, and draws on the tradition for dialogue and negotiation on the labor market. In the 70’s it was formulated as a co-operation between researchers, developers, users and union representatives – unskilled labor and blue collar. The aim was resource building by educating the user (representative) to take part in work place negotiations. During the 80’s a new strategy of development of alternative technologies gradually evolved the aim of which was to develop tools together with workers. [9]. During the 1990s, collaborative design went through several transformations with the development of multimedia, internet-based communication, and new user groups e.g. knowledge workers. This was a challenge and it led to new approaches to user participation, to new tools and to new theoretical foundations one of which was Dialogue Design.

Dialogue Design focus on working life of high resource groups, knowledge workers [10]. Dialogue is seen as the fundamental tool and at the same time as the process through which mutual understanding and design decisions can be reached. The ideal is that the dialogue process is a

learning process where participants – true to dialogue – challenges each other’s basic understandings through various dialogue techniques and reorganize their fundamental assumptions and perspectives. To open for and enhance collaborative processes special effort has to be put into the communicative acts and into a process of mutual learning among partners. Mutual learning is therefore the key concept in Dialogue Design.

The methodological framework of Dialogue Design grew out of a truly international, inter-cultural and interdisciplinary (Humanities, Social Sciences and Technology) ICT project the aim of which was to develop a distributed collaborative visualization tool for an international and Methodologically, the projects was iterated through three practices: *Understand practice* was founded in ethnographic and qualitative methods. *Vision for practice* made use of constructive design methods and *Negotiation of design* options aimed at reaching decisions about a new technology enhanced collaborative practice in the geophysical community.

A methodological framework may serve many different projects, but the techniques and tools must be iterated through careful understanding of the users, the organization, the task, the client, the context etc. that each represents a complementarity perspective¹. Each new inter-cultural project requires careful reflection and investigation revealing the complementary perspective which may be contradictory or paradoxes which cannot be done away with. It is essential in pluricultural projects that these perspectives are made explicit and faced before decisions are made. This process can only be iterative, participatory, and the final goal is a functional and pragmatic design which responds in a visionary way to the daily work practices of users.

But also Scandinavian tradition is embedded in a specific culture. As researchers and designers, we ourselves have limitations, we can only understand the other by standing outside looking in, and the understanding is framed by our culture, our cognitive horizon. We can never really walk in her shoes. Only a design approach that design process invites an inside-out perspective by giving voice to the other.

CONFLICT AND CULTURE

In an analysis of participatory practices, Muller [11] talks of a third space, a space that falls in between two distinct work domains. He calls it the hybrid realm and suggests that in the boundary region between these two domains there is a region of overlap or hybridity that contains an

¹Bohr, Niels (1964): “Kvantefysik og filosofi – Kausalitet og komplementaritet, 1958” i *Atomfysik og menneskelig erkendelse II* (J.H. Schultz Forlag, København), pp.11-18. Genoptrykt i Bohr, N. (1985), pp. 40-49.

unpredictable and changing combination of attributes of each of the two bordering spaces. Hence, in this space new insights and understandings may be found. Interacting in the in-between space is the Scandinavian Approach and it is characterized through its focus on dialogue - and mutual learning among equal participants – throughout the design life cycle. Equal in the sense that each is an expert, the system developer brings her expertise into the design process, the graphic designer is an expert in interface design, and the user brings his expertise and domain knowledge into the collaborative work [12, 7, 8]

The concept of hybridity is borrowed from Bhabha's work on location of culture [13]. Bhabha's area of concern was colonization, in which natives find themselves caught between their own traditional culture and the new imposed culture of their colonizers. In their effort to survive they continually negotiate and re-create their identities, at the same time creating a new hybrid or a third culture. Colonization is characterized through conflict and power. Embedded in the Scandinavian tradition - though not explicitly addressed - is culture. Not as in foreign culture, or as in national culture. But as culture historically founded in class struggle and the conception of IT as an area for power and conflict

The overlap between two (or more) different regions or fields (in-betweenness) may be drawn on to characterize the foundation of the Scandinavian design tradition. Despite class specific differences the basis was: the oppressed were the worker and the oppressors were represented by management. Though there are significant differences between Sweden, Denmark and Norway –in the eye of the inhabitants of these countries - seen from outside, there was, a common ground on which the collaboration across the Scandinavian nationalities between academics, workers and unions unfolded and prospered. Present day reflections on culture open a space which may best be described through the concept complexity. Cultures may be national cultures such as e.g. China - Denmark, cultures of city as opposed to rural cultures, e.g. Washington DC – Kooskia, Idaho, national city culture of high tech Singapore as opposed to national – but rural – culture of low tech Hanoi-Vietnam. The Scandinavian approach, if we want to participate in the global world, needs to realize that “the understanding of ICT and its needs for people in the developing world are hugely different from those people who live in a technology-rich environment [14].

But will development of IT invariably take place on the basis of conflict. Can development not also take place on the basis of consensus? Life necessity may drive the development [15], and the project may be characterized by wicked problems, but be based in a cooperation founded on dialogue and mutual learning – with the aim of designing a sustainable solution.

On one hand, the Scandinavian tradition seemed to fit like hand-in-glove with the in-between cultural approach. It was based in conflict between workers and management – the essential story of the labour market. The Scandinavian Tradition acted in the in-between- domain where developers and users met. But at the same time it grew out of and embedded itself in a political engagement where it gave voice to the natives, the suppressed, in their fight against the suppressors.

On the other hand, we face a global scene and the networked society, and the Scandinavian Tradition will fall short, if we do not reflect on the culture embedded in our methods and techniques and in our understanding of users and dialogue. To apply methods founded in Scandinavian democratic dialogue when developing new applications for knowledge workers in e.g. a Danish-Chinese enterprise, may be experienced as a form cultural imperialism by the Chinese users. It may make them feel exposed, insufficient, lacking qualifications because they are asked to enter into a culture of politics and language they have no cultural foundation for understanding. “Methods commonly used in Europe and America, such as participatory design and technology probes, fail to translate to contexts with different cultural knowledges, social relations, and infrastructure” [16].

Culture is dynamic and ever changing, but at the same time embedded in colonial histories, uneven economic relations [16]. Different cultures mean different language, different historical development, different lives [15], infrastructures and political systems - and also different knowledge, different cognitive processes [17] different rules for interaction between people.

In this development, the *weltanschauung* embedded in the Scandinavian tradition – expressed in its fundamental principles of dialogue and mutual learning and with this the meeting between equal partners collaborating throughout the process may be the initial point of departure.

OTHERNESS IN A GLOBAL NETWORKED SOCIETY

Getting to know the user is a way of getting around the complexity of Castell's network society and contextualizing culture opens a space of complexity. Cultures may be national cultures such as e.g. China - Denmark, cultures of city as opposed to rural cultures, e.g. Washington DC – Kooskia, Idaho, national city culture of high tech Singapore as opposed to national – but rural – culture of low tech Hanoi-Vietnam. The Scandinavian approach, if we want to participate in the global world, needs to realize that “the understanding of ICT and its needs for people in the developing world are hugely different from those people who live in a technology-rich environment [14].

Otherness is everywhere. It takes on new forms and new significance in a global culture where technical and traditional literacies are tied increasingly to the ability to use information technologies. In the current societal

context where goods such as IT and software and their interfaces are distributed widely across cultures, much care is needed in order to make such tools useful and indeed usable in the context in which they are sought implemented. Differences in culture and IT competencies are a very complex relationship and design processes need to incorporate these notions if we want to support sustainable development across the globe.

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