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RESEARCHING INTERCULTURAL PARTICIPATORY DESIGN

JOHAN BOLMSTEN
IT-University of Copenhagen and World Maritime University, Denmark

Abstract. What impact does culture have on tools and techniques that are used to facilitate cooperation amongst stakeholders in Information Communication Technology (ICT) design projects? This is a question facing the ICT development activities at the World Maritime University in Malmö, Sweden. At the university around 300 staff and students from 90 different countries come together every year. Continuously finding ways to improve how they can actively participate in design activities of useful and usable ICT support to benefit their everyday work is a prioritized area. This short paper presents a case that illustrates the intertwined and negotiated characteristics of culture when working with tools and techniques for cooperation in a student ICT design project. Using the case, an ethnographically based research cycle is explored to make sense of and ultimately further improve the interactions between the actors in an intercultural application domain.

1 Introduction

"Culture is a mess"…"Culture is so basic, so fundamental, so important, and no one can't quite figure out what it is" (Agar, 1994). Both these statements can be used to frame a discussion of the importance of intercultural considerations and the challenges and opportunities of conducting research within this domain at the World Maritime University (WMU) in Malmö, Sweden. At the university around 300 staffs and students from 90 different countries come together every year. In this sense, WMU presents an environment where intercultural encounters are part of the very core of organizational activities, including ICT development work. The impact that culture has on tools and techniques that are used to facilitate cooperation amongst stakeholders in ICT design project is thereby a question facing the in-house development department on a daily basis.

With its focus on 1) bringing heterogeneous stakeholders together in local development projects and 2) domain-expert driven development processes, Participatory Design (PD) is explored as an organizational implementation strategy both in staff and student related ICT development projects. To this end, continuously finding ways to improve how domain-experts can actively participate in design activities of useful and usable ICT support to benefit their everyday work is a prioritized area.

Intercultural considerations are an active area within Information Systems (IS) research. However, the predominate way put forward of relating to culture through

nationally derived value dimensions is increasingly receiving critique as not sufficient to guide improvement endeavors such as the ones at WMU. This short paper puts forward an alternative methodological approach based on an ethnographic research cycle that is currently explored at WMU to understand culture in relation to ICT design. Using a case involving students designing ICT application in a project oriented course preliminary results of applying the research cycle is presented.

The research is conducted from within and is part of a PhD study where the author complements his daily work with "embedded research". The daily interactions with stakeholders constitute the main empirical base in the research process.

2 Participatory Design and Intercultural Research

2.1. PARTICIPATORY DESIGN RESEARCH

A focal point in PD is the acceptance of bounded rationality and a pluralistic view of organizational actors and their interactions. According to the interpretation used here, PD provides a set of tools, methods and techniques that focus on the cooperation between domain experts and software engineers around the development of IT support. This is reflected in PD tools and techniques through viewing the development of software as a continuous and cooperative learning process; a process involving both the design in it-self as well as the unfolding of a problem and its corresponding solution (Floyd, 1992).

Contemporary PD research approaches commonly targets how end-users in the capacity of domain-experts can influence situated innovation in the local project (Y Dittrich, Eriksén, & Wessels, 2003; Greenbaum, 2008). One recent development to this end is the Cooperative Method Development (CMD) framework, which is used as a foundational methodological framework within this research study (Y. Dittrich, Rönkkö, Eriksson, Hansson, & Lindeberg, 2008). The CMD framework is based on an action research cycle consisting of three phases: understanding, deliberating change, implementation, and evaluation of improvements. Using an ethnographic research perspective, focus is put on the domain experts' perspective when evaluating empirical research, deliberating improvements and also designing the research process in-itself.

2.2. RESEARCHING INTERCULTURAL PARTICIPATORY DESIGN

This research study joins a growing argumentation within IS research claiming that the to date dominate approach of using nationally derived value dimensions (for example (Hofstede, 2005)) when studying intercultural encounters, alone, give a to simplistic view of the notion of culture and inquiry into intercultural encounters.

A more dynamic view of culture is called for; one that sees culture as contested, temporal and emergent (Myers & Tan, 2002). Culture is not merely set in pre-defined structures and concepts but in "rules and behavior and the ability to deploy resources which exists in the human mind itself" (Walsham, 2002). In this regard, the dynamics of culture can be understood from a negotiated perspective where national culture together with other cultural traits as a professional identity or social style serve as a point of

departure when forming or entering a relationship in a multicultural environment. Factors like organizational structure, relations of power, but also specific issues and upcoming circumstances, then, help to shape or trigger a negotiation process towards a new and emerging cultural landscape (Brannen & Salk, 2000; Friedman, 2005).

To relate to culture in this way, this research study explores an ethnographically inspired research process framework that coincides with the sentiment of the CMD action research cycle used in PD research. The framework, which is originally developed, by (Pfeiffer, 1998), has been practically applied by (Nyström, 2001) in an intercultural environment.

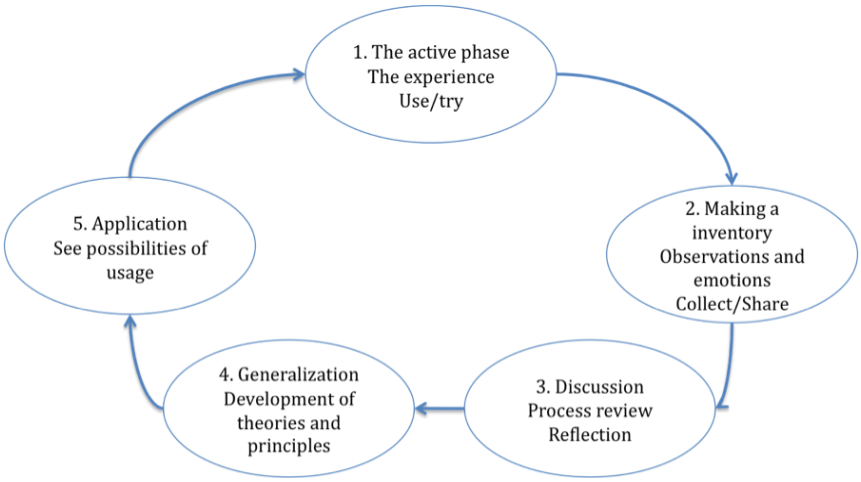

Figure 2. Free translation of (Pfeiffer, 1998) learning cycle.

As the CMD approach, the framework takes its stance in action (1). In this case in relation to the design of ICT in an application domain that is interesting from an intercultural perspective. It involves individual (2) as well as collective reflection (3) where people are in charge of their own learning process. In this sense, in the same way as the CMD framework it goes beyond mere involvement of actors in the design of a product and includes an appropriation of the design process itself (Winschiers, 2006). It is therefore structured enough to give practical guidance but flexible enough to enable situated tailoring in the specific research project. The goal is to come up with a new frame of understanding involving new theories and principles (4) on two different levels

a) On an individual level a new frame may improve your own communication.
b) For the purposes of research, generalizations beyond the individual are called for. The frames have to be anchored with reference to some group or community.

Reflections concerning how to improve PD techniques and tools including intercultural considerations constitute an input for future action (5). This means that the research focus is to influence or change some aspect of the targeted research domain. The

challenge for both PD and intercultural considerations is to prove itself viable in a new cycle of organizational application.

3. The WMU research setting

At WMU, a nationally diverse staff body consisting of 20 academic1 and 30 administrative and assisting staff members from 15 different countries works with academic and professional delivery of courses, research, and administration. The core mandate of the university is to serve the international maritime community - under the flag of the international maritime organization (IMO) - by providing master programs to maritime professionals predominately from developing countries. 250 students from about 70 different countries graduated as part of the 2009 class.

At the university the author is employed as an "IT Program Officer", where I complement my daily work with PhD studies as an "embedded" researcher. In this way, my own work as a software designer and lecturer and my interactions with user stakeholders comes to constitute the main empirical base in the research process. Through an active collaboration between me - as the primary researcher -and those participating in the research, the aim is to understand and improve whatever is the focus of the investigation.

4. A project-oriented course regarding ICT development

For the purposes of this paper, intercultural encounters are illustrated through the interactions taking place in and around a project-oriented course regarding ICT development. The students attending the course are themselves professors and lectures at different Maritime Education Training (MET) institutes around the world. To them the course is of relevance, as ICT increasingly is an important component for MET. To this end, the learning goals are twofold: (1) for the students to develop a basic understanding of ICT support to support the MET work area and (2) to achieve a fundamental understanding of how to work with issues of implementation and design in an organizational setting.

The course takes advantage of the fact that due to the development and deployment of configurable half-products, e.g. contents management systems, how to work with design, development and maintenance of organizational ICT support has changed character. Users, today, may not only participate in design phases of tailor-made programs, they also select, configure, and maintain configurations. With no requirement on prior technical expertise, the students in their capacity of domain experts are confidently put in the role of local designers that can take the lead in the (Participatory) Design, procurement, development and configuration of an organization's infrastructure.

To mirror a real world implementation project, the main part of the one-week course consists of developing a technical prototype for a realistic application. The

[1] The academic staffs are complemented by around 100 visiting professors from governments, international organizations in industry and in the higher education sector.

prototype should contain basic functionality of an ICT portal to support staff and student communication. The project group receives coaching like supervision and have a purposefully arranged and equipped classroom to their disposal.

During the course, the students work with a technical platform that allows for rapid application development without necessarily requiring programming skills. A complete technical product can be produced through administration and configuration of an existing framework and existing software modules. Learning to handle its possibilities and constraints enable maritime professionals and MET professionals to cope with similar complex customization and configuration tools in their home organizations. Today, there are a wide variety of such technical products available both in the open source community and in the commercial market.

To enable an understanding of how relevant MET work practices can be supported by the capabilities of the technical platform in a new ICT design an agile development approach is used together with PD inspired techniques and tools. A number of best practices are put forward to practically guide the project work. These include: a project centered style of work is for example upheld by collective ownership of the solution designed by all involved project members, and all development is done through pair programming. A project is guided by an overarching *metaphor* that is broken down into concrete requirements through a *planning game*, where individual pieces functionality are specified from the customers own descriptions on *story cards*. An evolutionary mode of development is promoted through developing functionality in *small releases* with, at any given time, the most *simple design* possible that is continuously integrated into an operational product. In addition, different types of representation techniques such as paper-based *mock-ups* are used.

During the three years the course have been taught, all groups have succeed to create a working prototype together with a meaningful discussion of how it integrates into organizational activities. To date, two of the prototypes are continued to be developed by students in their home organization.

5. Intercultural considerations unfolded

A hotchpotch of different intercultural considerations and implications are present both in and around the course.

Such considerations start even before the course. Each year before the course begins, a task facing a course professor and me is to divide the students in appropriate teams. The goal of our exercise is to achieve a suitable team composition that is able to give the students a taste of the dynamics of ICT design work in a real implementation setting. This information that we have to base our selection on is quite limited. For the class of 2010 the following information were available to us: name, gender – three women and six men, age – ranging from 27 to 43, professional and educational background – most of them with experience within maritime engineering, and country of origin – Indonesia, Saudi Arabia, Pakistan, Chile, Japan, Myanmar, Viet Nam, Malaysia, and Malawi.

What is apparent is how our discussion often circles around simple and common stereotypes such as that women are less technically capable than men; someone from

Japan will be more technology savvy than someone from Malawi and will therefore be more likely to perform better in the project work; in the same way, a woman from Viet Nam will be less likely to play an outspoken and prominent role in a project group compared to a guy from Saudi Arabia or Chile etc.

However, having been involved in this course a number of times, what is also apparent is how these stereotypes often are broken once the course commences. Using the above assumptions as a base for discussions, an account follows of how the course unfolds. The account given is based on both individual as well as collective reflections.

The Malawi student, FS, was the second participant from his MET institution attending the course. Both he and his colleague showed a profound interest in how ICT potentially could support staff and student communication in the future. However, they had limited technical experience in general and regarding ICT in particular. At their institution computers were currently a novelty and networks non-existent. When coming to WMU as a student was the first time that he had experienced staff and student communication using ICT. And when he sat down in front of the computers in the classroom during the first day of the course, he expressed that the idea of him being able to hands-on contribute to the work of a technical prototype seemed far-fetched. However, as it turned out - much to his own but also to our surprise - he became one of the most influential members of his group. Reflecting after the course had ended, he believed that the paper-based mock-ups had in particular worked in his favor both to understand the technical platform and to communicate with his group members. The technical platform that is used during the course essentially works like a canvas divided into different panes in which different pieces of functionality are placed such as document management, announcements, forums etc. Every morning his group began their day in front of an A2 sheet of paper with a printed browser window. Using print-outs of the different pieces of functionality available to them, coloring pens, scissors, tape, and glue they together mapped out the design of the web pages that they were going to work with during the day and discussed their purpose. They then divided the work into story and task cards and worked in pairs during the reminder of the day to practically implement the functionality into the technical prototype. This became a way for FS not only to understand how a vision for ICT support could be realistically translated into a certain piece of technical functionality, but also how to practically engage in the work with the technical implementation himself.

Contrary, to FS, the Vietnamese student, TL, turned out to be technical capable. She had worked with technical programming in a number of projects in her home organization before. As predicted, she was, however, comparably silent. Also to her though, the project tools and techniques worked in her favor, but from the other way around. The risk she was running in the project work was to end up in a dedicated technical role and being told by the other project members what functionality to implement. However, in line with the PD foundation of the course, collective ownership is one of the cornerstones that denote the project work. This means that she was, on the one side, not allowed to work only or alone with technical programming. In the same way, all major design decisions of what functionality to implement have to be collectively made by the group. This is practically supported through how the planning game, story cards, small releases (evolutionary design), pair programming etc works. Even the idea that everybody works in the same room (which is also the case in a real

implementation setting) supports this practice. In this way, she was naturally put in the centre of the project work together. After the course had finished, she expressed that this had helped her to "take place" in the project work and voice her opinion.

The Japanese student, MS, was probably the most technically capable person taking the course. However, as opposed to his colleagues in the group he did not appreciate the "kinder garden" style of the paper-based mock-ups. In addition, the egalitarian project model to him came across as messy, ineffective, and unrealistic in comparison to the work approach he was used to from his home organization. In his experience a clearer division of roles and tasks were preferable, where a project manager would assign each project member tasks. To this end, he also argued for the benefits of using a project management tool that he was accustomed to where tasks and roles clearly could be specified and assigned. In his mind, this would have allowed for a more effective and fair work division and systematic follow-up of how the work proceeded. In this sense, the tools and techniques used during the course for him in essence became an obstacle. And accordingly, this had negative implication for his motivation and participation in the project work.

6. Concluding Remarks

It could seem like a straightforward exercise to derive differences, surprises, or departures from what we know2 that is related to different cultural dimensions in an environment like WMU. However, as is shown through the above discussion, this is not necessary the case. In this sense, the negotiated perspective of culture is illustrated where many types of cultural values may be interrelated in an intricate web of connections. For the specialization professor and I, the experiences around the Vietnamese student became an example of how national culture is mixed up with professional experience and culture. The same could also very well be the case in regard to the Japanese student where traditional Japanese national culture traits such as high power distance might be accentuated by his professional occupation as an onboard vessel trainer of young marine cadets – probably in-itself a quite hierarchical and "clear commands type of" environment.

To this end, we are only in the starting phases of exploring how the proposed research framework can be put into action and how it can bring value in terms of change. To reach a – for our purposes - coherent understanding of how different cultural dimensions break down or hold together that can lead to generalizations of new theories and principles additional collective reflection is needed. In relation to the course, we have experimented with conducting follow-up workshops (after all course related matters are completed) where the students can volunteer to continue to reflect on the course work and outcomes. In our case, an external professor co-organized the workshop and tools such as freehand drawings, collages, communication models, timelines, and design sketches presented were used to support reflection. Following the workshops revisions of the course material and also teaching approach has been

[2] This is what Agar refers to as a rich point that forms the very basics of intercultural learning.

undertaken. Something that we, for example, continuously work with and that is constantly up for discussion is the egalitarian project model. This was the first time someone from Japan attended the course which again resulted in new reflections of what working in this way meant, how is it transformed into action, and what tools and techniques this collaboration style implicate?

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