Towards transdisciplinary research

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Abstract

In this paper long-term research collaboration is analysed with the lens of transdisciplinarity and experiences of the collaboration as well as well-working practices are presented.

Author Keywords

Transdisciplinary; interdisciplinary; research.

ACM Classification Keywords

H.1.m. Models and interfaces: Miscellaneous.

Introduction

Currently universities are increasingly guided towards transdisciplinarity due to the changes in the society and possibilities that transdisciplinarity promises regarding the demands set to the universities [7]. Indeed, when wishing to understand and solve complex, multifaceted problems, combining views from different fields of research is useful. Our research group has for long been interested in what it means that our lives are increasingly technology-rich, even so that a concept of 'digital natives' [6] has been presented, and we feel that this area of research benefits from transdisciplinary approach. We have a long history of collaboration both in research as well as in teaching. I report here our experiences related to this collaboration, analyzing the transdisciplinary nature of the collaboration.

Transdisciplinary research

There are different views to what transdisciplinarity in research means. Wickson and colleagues [10], based on previous literature, suggest that transdisciplinarity in research shows in three characteristics: problem focus, methodology, and collaboration. In regards of problem **focus**, in transdisciplinary research there is an intention to understand and solve multidimensional and complex problems (see e.g. [10]). In **methodology**, contrasted with *multidisciplinary research* where discipline-based methodologies are typically relied on [2] and *interdisciplinary research* where a shared methodological approach is agreed [10], in transdisciplinary research disciplinary boundaries need to be dissolved to construct methodologies tailored for solving the problem, with an emphasis in integration of disciplinary epistemologies [1, 2]. In addition to that, Wickson and colleagues [10] suggest that an important characteristics in these methodologies is that they develop over time, as a response to how the research itself evolves and changes and new understandings are created of the research topic and context. Regarding **collaboration**, the participative nature of collaboration is stressed in transdisciplinary research; not only collaboration between the researchers, as in interdisciplinary research, but intentionally involving also the people affected by the research in the problem formulation as well as in the definition of the "criteria, objectives and resources used to analyse and resolve" the problem [9].

The context

Our research group has a long history of collaboration, formalized as a named research group in 2008, starting with a one-year-long period with an active process of meaning-making and a search for common understandings. The theme agreed to cover our shared research interests emerged from these discussions: interest in "the technology-rich everyday life in neo-communities". Members of the group have changed throughout the years but four core members have worked actively together in conducting research projects, publishing, supervising, and teaching courses. These four members' backgrounds are a combination of cultural anthropology, human computer interaction, information systems, business, language studies, and teacher education, currently working in two discipline areas: English Philology (EP) and Information Systems and Human Computer Interaction (IS&HCI). They are all female post-doctoral researchers who also teach actively. The data for this paper includes a workshop arranged for the specific purpose of discussing the research group history and working methods, attended by these core members, as well as all the accumulated documentation from the years of working together, including e.g. project proposals and their drafts, project documentation, and email discussions.

Using the Lens of Transdisciplinarity

Agreeing the focus

When analyzing the research group work with the above-described lens of transdisciplinarity, it is easy to see that the focus of the research is clearly transdisciplinary. The focus has remained the same throughout the years and is still valid, and we can assume that it is due to the long negotiations when forming the group and wishes to deeply understand and combine the interests of all members.

There were three important 'tools' for crystallizing the theme as well as for understanding the interests and strengths of the different members: First, we soon

decided to concretize our collaboration in a form of small-scale student project that we all guided in form of a project steering group. Discussions related to steering of the project as well as practical experiences of how to conduct such projects and work together in general, helped us to see what issues were still needed to be negotiated further. Second, at the same time we started to write our first project application for the group and it allowed and also forced us to write things down, making them clearer. And third, we started to write our first paper, of the results of the student project, which forced us to have methodological discussions. When writing the paper we for the first time needed to take into practical use nexus analysis [8], which we had discussed as a possible research framework that also offered suitable theoretical concepts for our use. All these three 'tools' thus helped in setting a clear and common focus, even though at the time we still did not know each other as well as now.

The currently planned new research projects still revolve around the original theme which has produced interesting research: "*When thinking the papers we have written I have to say I'm really happy with them*" (one of the research group core members). Regarding teaching, the same focus clearly shows in both disciplines in selection of course themes and topics of supervised theses.

Tailored methodology
One of the core members of the group was familiar with nexus analysis (NA) [8] which we soon adopted as our research framework to guide our research. From early on we understood that our research intended for change and also researchers working actively with the

research subjects, and NA covers this well. NA has roots in the field of language studies but it is interdisciplinary in nature and focuses on social action. It combines different research approaches in a sequence of steps from engaging, navigating and changing (e.g. ethnography, interaction analysis, and qualitative study of different types), allowing the study of phenomena as they unfold in social (inter)action *in situ*, but inherently bound in their historical trajectories across multiple timescales. It involves a participatory stance in the researcher stepping into the community itself.

During the years of collaboration we have tailored our own way of using NA and even published a paper [5] suggesting that central concepts of NA could be used in the fields of IS&HCI as well as a paper that utilizes language analysis when analyzing data gathered for HCI purposes [3]. We share the ideals of agency and genuine participation (contrasted with e.g. decorative or tokenistic participation) of people whose lives we study. However, regarding how deep is the integration of our disciplinary epistemologies a further analysis is still needed.

Collaboration with children
Our research has increasingly moved towards involving the research subjects in the research process. The researchers with IS&HCI have Participatory Design background which already includes an ideal of involving users in the process, and one of our early project proposal drafts already stated that "*Our aim is to establish genuine interaction between the diverse actors in the field.*" As we work with children in most of our studies, we have discussed the question of how much they can be included in e.g. setting goals and

making decisions (see [4]) and also made conscious attempts to give children as much voice as possible (see e.g. [5]). One of the central questions of our research is how far can we go with collaboration with children and what are the methods to make genuine participation of children possible, in their everyday settings.

Practical issues

Quite early on we felt a need to define the ways of working we felt furthered our collaboration best. They include study circles, small-scale student projects, thematic seminars for disseminating the results, data workshops for analyzing the data in groups, 'paper projects', and externally funded research projects.

Agreeing the common methodological background and using and developing it to meet our needs have been in focus during all the years. As NA was originally quite new to all of us, we very soon started to train ourselves as well the students we supervised in **study circles**, reading about the methodology itself and studying how NA has been used by other researchers. These study circles have widened to cover other central issues such as e.g. reading and discussing different qualitative methodologies that were of interest for the participants. Our students get credit points from working in the study circles and the senior scholars can further their personal interests while at the same time acting as reflecting boards for the students.

Short (4-5 months) **student projects** have been a useful tool for focusing our research and gathering research data and also a very effective way of **combining research and teaching**, as most of the

research group members have always been teaching actively. In our first ever student project we needed to consider how in practice we can guide the students so that they are able to collect useful research data for us and how to do it ethically both related to under-aged children as research subjects as well as related to ownership, use, and long-term storage of the data. This culminated in formulating an **informed consent form template** for our own use. We also needed to find ways to restrict research data access as promised in the informed consent form as well as to share the data when needed. Our current solution for this is a shared network drive acting as an archive with limited access rights.

We have also felt a need to share the results of our studies both among the research group members as well as externally to find similar-minded people, and have thus been arranging **thematic seminars** related to the field of our research with themes like "Multidisciplinary Thematic Seminar - Participation, Technology and Everyday Life" (in 2010).

We have a long history (preceding the formal research group collaboration) of using **data workshops** for analyzing pieces of data in group sessions, to both teach data analysis methods as well as to get new insight to the data. Seeing **paper-writing** process as a **project** has also been a central tool of collaboration. This process has evolved over years and currently if has the following characteristics: we set a deadline for these projects, assign the first author, share tasks and commit to them, set dates when the tasks need to be finished (according to individual's realistic schedules), set dates for data analysis workshops, set several meeting dates beforehand, send new version of the

paper for review couple of days before the meeting, write memos of meeting with decisions and new tasks, and manage the paper revisions by using version numbers. As we share a new version of the document via email the email contains a brief list of major changes to the document and often a reminder of what are the next tasks. In addition to that we use change tracking embedded in the word processor tool and have agreed how to add comments to the document. Writing papers together has taught us maybe the most: seeing the data from the viewpoint of another discipline can be very eye-opening and methodological discussions related to data analysis have driven our work forward.

Applying for research project **funding** has also forced us to define and re-define our collaboration and what benefits we see it to create. Even though we have not been very successful with our applications this has still guided our research as we have typically tried out our ideas in the students projects. Reasons for rejects are manifold but we have also been pondering what could be the effect of combining the disciplines – are we not able to communicate our message clearly enough to the reviewers with background on only one of the disciplines?

Regarding **communication**, we use email but also a common workspace for sharing documents. We also soon noticed a need for a website for our research group, to share information externally but also internally, communicating about our study circles and seminars we arranged. Lately, with new members in our research community, we have created an email list, open to all interested, to be sure to reach everybody.

Conclusion

It has taken years of working and learning together to find what practices serve our research group best. It has been central to our collaboration that we have worked together also without external funding. We are not extremely transdisciplinary research group in light of the definitions presented above but we are on the way to that. Reaching it is not any special objective for us but in any case our quite transdisciplinary ways of working have brought us very satisfying working processes as well as research results we would not have been able to reach without this collaboration. We will definitely in the future examine our collaboration more critically to see whether we could benefit from more conscious focus in transdisciplinarity.

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