

The struggle to find the best solution: Interdisciplinarity as a prerequisite and challenge of co-creation? Reflections from the practice

Katharina Giordano

HAWK Hildesheim/Holzminden/Göttingen, katharina.giordano@hawk.de

Juliane Leinweber

HAWK Hildesheim/Holzminden/Göttingen, juliane.leinweber@hawk.de

Alina Ernst

Fraunhofer-Institut für Digitale Medientechnologie, alina.ernst@idmt.fraunhofer.de

Laura Tuschen

Fraunhofer-Institut für Digitale Medientechnologie, laura.tuschen@idmt.fraunhofer.de

Angela Osterheider

Katholische Hochschule für Sozialwesen Berlin, angela.osterheider@KHSB-berlin.de

Cordula Endter

Katholische Hochschule für Sozialwesen Berlin, cordula.endter@KHSB-berlin.de

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1 INTRODUCTION

This paper aims at providing a case study as a basis to discuss the process of co-creation and the reflection of the same within the first international workshop on co-creation of hybrid interactive systems for healthcare.

The goal of the project HiSSS – Hybrid interactive speech and language therapy after stroke – is to develop a platform for speech-language therapy that enables patients to make use of such either alone or in an interactive session with a therapist, in a hybrid setting or on-site. Therapy contents shall be digitalized and provided with tailored individual, technology-based feedback, which the therapist can also consult as an objective supplement or progress monitoring. For the development of an interactive therapy platform addressing various therapy settings it is important to involve the people whom concerned

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– patients and therapists – and meet their requirements, expectations and needs. Therefore, the process of developing the platform, its contents and feedback options follows principles of co-creation.

The creation. The project consortium includes partners from divergent disciplines and backgrounds, yielding a high interdisciplinarity. While the scientific partner HAWK supports the realization of the user workshops with speech therapy expertise, Bitnamic GmbH is improving the server structure and SpeechCare GmbH is responsible for the design and project coordination. At the border of science and economy, the branch of the Fraunhofer Institute for Digital Media Technology – Branch for Hearing, Speech and Audio Technology – focuses on the development of applicable software solutions to automatically and objectively assess speech and language disorders by analyzing audio recordings of the patients. Automatic image processing methods of the video data are also co-developed for the assessment of mimic exercises in central facial paresis of the target patient group.

HISSS is supported by the accompanying research project CoCre-HIT. As a part of the funding program CoCre-HIT has two main tasks. First, it communicates methods, application possibilities and theoretical background on participation and co-creation. Second, it accompanies the technology development projects in their participation practices and co-creation process.

While working at a common vision for enabling accessible, high-frequent and effective hybrid speech therapy, questions arise 1) on how-to efficiently and successfully find a common language among the team members and 2) on what role the interdisciplinarity of the members of the project consortium plays in the co-creative development of the platform. The specific sub-questions are as follows:

- How can we obtain a successful communication in an interdisciplinary team to develop healthcare technologies?
- Is the interdisciplinarity of the consortium a pitfall or potentially a prerequisite in the context of participatory or co-creative technology development?
- Against the background of interdisciplinary communication processes within the HiSSS project: how can we realize a fruitful participation and co-creation with potential users?

2 EXPERIENCES FROM THE PROJECT MEETINGS AND REFLECTIONS

In the following, the practical experiences are described that were made within the project HiSSS while co-creatively developing the above described therapy platform. Emphasis is put on the project meetings that could be realized on-site. Additional, impressions from the perspective of the accompanying research are described.

2.1 Reflection of the HiSSS consortium

The first face-to-face project meeting was held in Oldenburg in September 2022. The aim of this meeting was for the consortium partners to exchange information on the processing status of the first work packages, to concretise the common project goal and to define the next steps for each partner. To specify the project goal, partners had to present their vision of the HiSSS project. The visions were recorded on video for the web-based presentation of the project. The first project meeting showed that a joint look into the current system illustrated the development status and partly application possibilities of the system. With the visions formulated, the different expectations of the consortium partners became clear. While the technical partners strive for a usable and finalised system, the scientific partners are interested in generating the most authentic, theory-based and complete knowledge possible.

The second project meeting of the consortium took place in Göttingen at the end of March 2023. After every project team member presented its current state of work, the hosting member arranged a “world café” to brainstorm and discuss the three settings of the therapy platform (face-to-face, synchronous teletherapy and asynchronous teletherapy). In each setting, it was mandatory to consider and integrate the needs and prerequisites for successfully addressing the patients and therapists.

The following session was led by members of the project CoCreHit. The aim was to give background concerning the participation methods for developing healthcare technologies in the literature, and to start a discussion about the understanding of participation and co-creation afterwards. A lively discussion among the project members took place, revealing the divergent focuses and expectations of integrating affected people in the process of development. The session ended with a suggestion on how to shape co-creating workshops as well as the communication concerning the teamwork for preparing and revising these workshops. In the second project meeting, the complexity of a co-creative technology development process became particularly clear and that different backgrounds induce different orders of priority regarding the co-creative factors that have to be considered. The factors that have to be weighed against each other when realizing co-creation are user requirements, technical possibilities and time and personnel resources.

2.2 Reflections of the accompanying research project

From the perspective of the accompanying research, it became clear how the project partners struggle in joint discussions to develop the best possible version of the prototype. However, precisely this question of what is the best version is a quite difficult one. One reason is the interdisciplinary project context, the associated discrepant understandings and approaches as well as objectives and research perspectives. It became clear how ambitious all participants are, but also how time-consuming and demanding the process of understanding is. An example of this is a World Café that was part of the second project meeting in which different teams explored the question of how to design the prototype. This discussion format turned out to be extremely productive, because in the differently disciplined teams it was always necessary to first explain to the other participants what exactly was meant, what certain technical terms meant and what concretely their own idea of the application encompassed, what it should look like, what benefits and what abilities it should have. Speaking, explaining, sketching and explaining together were fundamental in order to develop a common understanding and thus also an understanding of the different objectives. Building on this, this understanding led to an openness towards the arguments why certain features are necessary and others not, why certain implementations are technically complex but possible and others not. This observation was also reflected in the statements of the project partners, who experienced this struggle for mutual understanding and appreciation of the other perspective as extremely productive and motivating. It became clear that interdisciplinary technology development succeeds above all when there are exchange formats within the projects that offer opportunities to familiarise oneself with the perspective of the other partners. These formats need time, resources and should take place in a protected space in presence, which does not primarily serve the exploitation of results, but rather mutual understanding.

Another interesting observation emerged from the discussion about the understanding and the prerequisites for success of participation and co-creation. The importance of using participatory and co-creative methods in technology development was emphasized. In the course of this discussion it became clear that especially the persons developing the co-creative formats would like the different disciplinary partners to contribute their ideas for the formats more strongly. This was taken as an opportunity to talk about the future design of the regular internal project meetings. It was discussed in detail and a first roadmap was developed together, how the future meetings can be designed in a way that the different disciplinary perspectives are sufficiently taken into account and, above all, that they are thought of in an interdisciplinary way. It

becomes clear how important it is to take sufficient time for negotiations in interdisciplinary working contexts in order to be able to integrate all disciplinary perspectives well in the development of co-creative methods.

3 OUTLOOK ON WORKSHOP

The considerations described highlight obstacles in an interdisciplinary co-creative process, as also mentioned in previous papers. Khaled & Ingram [2] state that one challenge is bringing together the different perspectives of the participants, which influence each other and are interwoven. Altizer et al. [1] add that the biggest challenge for collaboration in this context is the need to develop a common understanding. The prerequisite for this is that all members of the interdisciplinary team learn to communicate with each other and are willing to learn from one another. Saille et al. [3] describe the challenges of interdisciplinary collaboration from the perspective of a robotistic/design team as part of a co-creative project on the topic of robotics design. Within a group discussion, Schmitt et al. [4] discussed concepts and interpretations of an interdisciplinary research practice.

The initial question of the paper is to what extent interdisciplinarity is a prerequisite and challenge for co-creation. For this purpose, two face-to-face meetings of the HiSSS project were described and reflected upon: from the perspective of the HiSSS consortium and from the perspective of the accompanying research. The reflections lead to several questions that can be brought into the workshop on co-creation of hybrid interactive systems for healthcare as suggestions for discussion to highlight and discuss the implications of the collaboration of interdisciplinary teams within technology development projects:

- What are conditions for success in interdisciplinary communication?
- What are obstacles in the context of interdisciplinary communication?
- What role do disciplinary perspectives play in interdisciplinary/interprofessional collaboration in co-creative technology development projects?
- What approaches and methods are there to integrate (inter)disciplinary perspectives in co-creative projects and to make them fruitful for the development of co-creative formats?

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