Participatory Design in Māori Cultural Contexts

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Abstract

The Hakituri project aims to develop practical and ethical wearable monitoring solutions for workers in hazardous industries. We identified specific challenges pertinent to our participatory design process for this project which relate to the indigenous participants, cultural expectations and data sovereignty. As we developed the ideas for our design process, further challenges became evident. In this paper we explore the challenges that unfolded and describe how we began to mitigate them and develop ideas for similar future challenges.

Keywords

Minority culture · Indigenous data sovereignty

1 Introduction

Forestry is one of New Zealand's most dangerous industries. Māori workers are over-represented in such higher risk occupations. The Hakituri project aims to develop practical and ethical wearable monitoring solutions for hazardous work industries, and is currently working with the New Zealand forestry industry. The particular challenges we face with our participatory design process are

based on both the nature of the participant group and their relationship with the researchers (Māori/non Māori; non technical/technical; domain experts/domain novices) and the context of incorporating data sovereignty (DS) and indigenous data sovereignty (IDS) into both the technical solution and the design process.
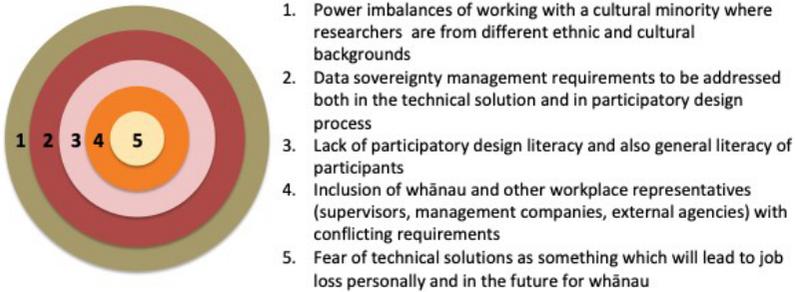
Extensive research into designing for, and with, minority groups does not typically address the power balance that occurs when the minority group are the indigenous people of a post-colonial country. Most of the research that does consider this is in the domain of social sciences (e.g., [1, 12]) rather than in computing design. Similarly, while it is understood that mixed participant groups which contain a power imbalance (workers/managers) can lead to particular problems in participatory design (workers may not feel empowered to express their real needs) we also introduce whānau (extended family) and community elders into the design process. Their voice is important, but their presence may also influence the response of others. Finally, our requirements include that the participatory design process itself follows IDS principles.

We thus find ourselves in what Linda Smith called the "Tricky Ground" of indigenous research methodologies [14]. Hotere-Barnes acknowledges *Pākehā paralysis* [6]: non-Māori (Pākehā) researchers concerned about perpetuating Māori cultural tokenism, and their engagement in Māori-focussed research while power imbalances are in favour of Pākehā. While these issues have been discussed extensively for educational and social science research [1, 12], they are rarely acknowledged in technical fields. Western research practices traditionally disadvantage and distance Māori from "real participation and voice" [2]. Revitalised traditional indigenous practices, known as Kaupapa Māori, resists traditional Western research methodologies and seek to balance unequal power relations [13]. Pertinent Māori-relevant research methodologies are an ethics framework [9], Appreciative Inquiry [4], and Whānau Tuatahi [8]. While most focus on collaboration and communication, none of these consider an ICT context. Similarly, research on the adoption of values of Indigenous people in workplace situations is sparse, both in Aotearoa New Zealand and internationally [5, 11].

Our design process requires understanding and adoption of the relevant principles from the work discussed above. This led us in the first instance to engage an external Māori research facilitator for the design workshops and to work with her to reframe our design questions and process. We initially describe the design process we set up, with a structure envisaged to address the challenges outlined above (see Section 2). We then highlight the specifics that unfolded as we finalised the process and began to run the design process.

2 Participatory Design Process and Challenges

The concepts of indigenous data sovereignty [10] and indigenous intellectual property [3] are about the data rights and interests of indigenous peoples,

1. Power imbalances of working with a cultural minority where researchers are from different ethnic and cultural backgrounds
2. Data sovereignty management requirements to be addressed both in the technical solution and in participatory design process
3. Lack of participatory design literacy and also general literacy of participants
4. Inclusion of whānau and other workplace representatives (supervisors, management companies, external agencies) with conflicting requirements
5. Fear of technical solutions as something which will lead to job loss personally and in the future for whānau

Fig. 1: The Increasing Challenges at Each Level.

addressing questions of collection, ownership, access, use, and dissemination of data pertaining to indigenous people. As the Hakituri project aims to develop a wearable monitoring solution, the gathering of large amounts of personal data from indigenous people means that IDS is a relevant consideration. However, we are also gathering data during the design process itself, and all information gathered needs to treated in keeping with IDS concepts. Te Mana Rauranga have developed a framework that can be used to consider attributes of data under a Māori lens to understand the interconnectedness of key concepts [7]. It can be used in part to help determine whether or not a particular dataset can/ should be considered as taonga (treasure). Using these resources, the participatory design process was structured around three workshops:

1. Introductory discussions to explore the concepts of personal data gathering in the workplace.
2. Based on the information gathered above we provide storyboards and scenarios for exploration and reflection.
3. A participatory evaluation session to explore refined storyboards and scenarios (from information gained from 1 and 2 above).

These workshops were planned to be carried out at one-week intervals. The process was designed to address both (1) the challenges around minorities with different cultural and ethnic backgrounds, as well as (2) IDS. Throughout the workshops, a number of further challenges emerged (see Fig. 1):

3. Literacy: The range of technical and written literacy of the participants was hugely varied.
4. Inclusion of secondary users: There were conflicting requirements from workers and whānau about who should have access to which data. There was also a wide divergence across age groups.
5. Focus on job security: Workers worried more about their workplace security than about any data misuse.

3 Outcomes and Lessons

We addressed these five challenges as follows.

A representative of the minority culture was included as part of the design team to facilitate the process. Our workshops were structured by non-Māori computer scientists and then tailored by the Māori facilitator. This included specific cultural aspects such as starting with whakawhanaungatanga (introductions based around recitation of genealogies), using Māori terminology for key concepts, ensuring that groups were structured to respect the hierarchies of elders present without influencing the inputs of the participants.

Data sovereignty in the participatory design process is addressed by reporting back any conclusions and by transferring all collected data to the participants.

In general the younger (16–30) participants were familiar with smart-phone use, the internet and (in some cases) computer gaming. We were able to use this to frame our descriptions of IoT technology, monitoring and data gathering around these concepts to make them more understandable. During the workshop activities participants were split into groups and given large sheets of paper and marker pens to write down answers to 3 questions. For each group we ensured there was a participant who was comfortable with writing down everyone's answers, and the question was both written on a whiteboard as well as read out and repeated verbally as required.

It was made clear that workers are in charge and have the final say in all aspects of data management and sharing. While the whānau may have a desire to get all of the information all of the time, this does not necessarily meet the requirements of the workers. We will need a higher level of personalisation for our tools than we had first envisaged to make sure this is easily satisfied for all groups. Understanding how such personalisation may be controlled by the primary users was incorporated into the activities of the third workshop.

Regular reminders of what we are/are not doing were incorporated into the activities. Agreement regarding the importance of jobs for now and the future, and how health and safety supports this (less pressure to remove workers from the equation if accident rates are lower) were used as motivations for the work.

In summary, barely any consideration has been given to the situation of minorities in participatory design in post-colonial settings, let alone the consideration of indigenous data sovereignty. Our work aims to address these issues by developing a suitably methodology for participatory design. This paper contributes by identifying issues relating to cultural expectations and data sovereignty that were observed during participatory design activities with Māori forestry workers.

References

1. Barnes, A.: What can pākehā learn from engaging in kaupapa māori educational research. Tech. rep., New Zealand Council for Educational Research (2013)

2. Berryman, M.: Kaupapa maori: The research experiences of a research-whanau-of-interest. Culturally responsive methodologies, pp. 263–286 (2013)
3. Commission on Human Rights: Mataatua declaration on cultural and intellectual property rights of indigenous peoples (1993), First Int. Conf. on the Cultural & Intellectual Property Rights of Indigenous Peoples, Whakatane, New Zealand
4. Cram, F.: Appreciative inquiry. Mai Review **3**(1), 3: 1–13 (2010)
5. Harris, F., Macfarlane, S., Macfarlane, A., Jolly, M., Cram, F.: Māori values in the workplace: Investing in diversity. MAI Journal **5**(1), 4: 1–15 (2016)
6. Hotere-Barnes, A.: Generating 'Non-stupid optimism': Addressing Pākehā paralysis in Māori educational research. NZ J. of Educ. Studies **50**(1), 39–53 (2015)
7. Hudson, M., et al.: He Matapihi ki te Mana Raraunga - Conceptualising Big Data through a Māori lens, pp. 64–73. University of Waikato, New Zealand (2017)
8. Jones, B., Ingham, T., etc.: Whānau Tuatahi: Māori community partnership research using a Kaupapa Māori methodology. MAI Review Journal **3**(1), 1–14 (2010)
9. Kennedy, V., Cram, F.: Ethics of researching with whānau collectives. MAI Review Journal **3**, 2: 1–8 (2010)
10. Kukutai, T., Taylor, J. (eds.): Indigenous data sovereignty: Toward an agenda, vol. 38. Anu Press (2016)
11. Kuntz, J.R., N¨aswall, K., Beckingsale, A., Macfarlane, A.H.: Capitalising on diversity: espousal of maori values in the workplace. The Journal of Corporate Citizenship **2014**(55), 102 (2014)
12. Kaupapa maori and rangahau website, http://www.rangahau.co.nz/
13. Smith, G.H.: Reform and Maori educational crisis: A grand illusion. Research Unit for Maori Education, University of Auckland Auckland (1991)
14. Smith, L.T.: On tricky ground: Researching the native in the age of uncertainty. The landscape of qualitative research **1**, 85–113 (2007)