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DEVELOPING EMPATHY FOR OLDER USERS IN DESIGN STUDENTS

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ABSTRACT
Empathy has been recognised as a key skill by practicing designers. With rapid changes to inclusivity and accessibility in the transport sector, student designers need to appreciate and understand the way in which people engage and interact with transport. They need to not only develop an understanding of older and vulnerable users, how they experience products, vehicles, services and systems but also have the confidence to try out new ways of finding information and gaining 'authentic experiences'. Although empathic design is encouraged, there is often little opportunity for this to occur in an already full traditional educational curriculum.
This paper reports a short intervention using readily available materials to create low fidelity experience simulations designed to increase the empathic horizon of transport design students. It concludes with a set of guidelines on how to create high quality learning experiences for students that will enable enhanced empathic design outcomes as they embark upon design careers.

Keywords: Elders, empathic design, design research.

1 INTRODUCTION

Empathic design, as with user centred design, was born out of a realisation by companies that users wanted more from their products, and technology alone would not sell products. We have entered an empathy economy where users are searching for deeper meaning from their material objects. Function needs to be enhanced by meeting the ephemeral emotional needs of users [1].
The strength of empathic design lies in raising awareness of 'what makes life rich, personal and meaningful' [2]. Thus empathic designers need to be able to reflect on and use their experiences to inform their own design and be able to communicate that to other team members. Designers and design students tend to perceive such research experiences as valuable but ultimately are keen to get 'back to designing activities' such as sketching, concept generation and model making. A meaningful empathic design activity should allow students not only to experience and empathise with end users, but to reflect, communicate and act upon this improved understanding.
It is often lamented that there are few opportunities within industry to have 'continual informal encounters with users' [2], and this lack is often reflected within design education. However, opportunities can be provided within course structures for students to engage in voluntary work (e.g. helping the community) in order to build up knowledge of users who are different from themselves. Nonetheless, such encounters need to be scaffolded within a reflective cycle [3], which enables knowledge and meaning to be extracted from encounters and influence design.
A more qualitative approach is needed to inform and inspire designers to help them understand the personal experience and private context of the 'other' [4 and 5]. This is in line with researchers who concluded that designers needed empathy and that this requires making an emotional connection with the user, understanding their situation and why certain experiences are meaningful to them [e.g. 6]. This could come about through a number of ways such as immersion in the life of the users, design probes and imaginative projection [5 and 7].
Empathy does need to be distinguished from sympathy that tends to *feel for* someone, rather than *feel with* someone. Thus empathy, in this case, is defined as 'the intuitive ability to identify with other people's thoughts and feelings – their motivations, emotional and mental models, values, priorities,

preferences, and inner conflicts' [8]. In addition, the term 'empathic horizon' has been used to indicate the limits on a designer's individual ability to empathise beyond certain characteristics of his or her group, such as nationality, background, age, gender, culture, experience and education [9]. Although this can change and develop over time through training and experience, it has been stressed that the willingness of the designers to engage in empathic experiences is key, and this paper considers the type of training student designers could receive to help them practice empathic design [10]. It looks at the importance of maximising the usefulness of the information provided by representative end users, in this case those who are older and vulnerable.

2 EMPATHIC ENGAGEMENT WITH ELDER AND VULNERABLE USERS

There are three classes of tools that can promote empathy in designers: techniques for direct contact between designers and users (research), techniques for communicating findings of user studies to design teams (communication) and techniques for evoking the designer's own experiences in a domain relevant to the user (ideation). The project discussed within this paper explores all three classes [11].

Addressing these three tools, it is typical that limited resources are available in design courses, and few research options are practicable. Whilst it would be extremely beneficial to bring students into contact with real users, in practice the research skills and sampling accuracy needed to undertake meaningful and useful research in undergraduate study might limit this approach unless the student displays tenacity and commitment to targeting representative users with high quality research instruments. Observational and codesign activities hold further potential.

Communication, in which experienced researchers and design teams conduct the study, interpret and communicate the user data and findings, has been advocated as a way to let designers understand the experiences of the user. Here the emphasis is not on quantitative data, but on storytelling [e.g.12].

Designers can also try to simulate the user's condition through ideation. A technique, which is gaining attention, is the use of whole-body simulation suits in design and transport research to provide designers with an immersive empathic experience [e.g. 13 and 14]. Any type of representation designed to understand, explore or communicate what it might be like to engage with the product, space or system has been described as 'experience prototyping' [15]. Focusing on situations allows the designer new insights; rather than looking at user characteristics they can focus on behavioural or experiential aspects.

3 FRAMEWORK FOR DEVELOPING EMPATHY IN DESIGN CLASSES

3.1 Methodology

For this study, low fidelity simulations were used, risk assessments were conducted and five Coventry University industrial design students taking an empathic design class were accompanied on an 'empathy walk'. Before they set out, they were assigned a variety of low fidelity experience simulations (e.g. crutches, visually impaired glasses). The inclusion of an accompanying person was two–fold, to keep the students safe, but also to provide a means of capturing reflection-in-action [3]. Students were able to verbalise, comment and share their experiences and feelings as they occurred. These were recorded for later analysis and were added to an online repository.

Time was allowed after each experience for students to verbalize to the group: what they experienced, how they felt, what was different, and how this could relate to their current and future design activities. This was conducted in a structured way – through 'quick question sheets' and with targeted questions. In these, students reported embarrassment at being too slow or a hindrance when they could not interact quickly enough to buy bus tickets, they felt isolated and scared when they were not able to see people clearly or read their facial expressions.

3.2 Introduction to the study

Taking into account the four phases of empathy [11]: 1) discovery 2) immersion, 3) connection and 4) detachment, we added a pre-phase of receptivity. The stages were played out with the students as follows:

3.2.1 Receptivity

The whole class were introduced to their 'empathy training' with a motivational lecture delivered by the second author, plus the offer of generous financial compensation for volunteers. Although over 50

students attended the lecture, less than ten expressed interest in the programme even though many of the students were undertaking projects that required knowledge of older or vulnerable users.

3.2.2 Discovery

The five volunteer student designers, making up the final cohort, were provided with tutorial support, written materials and a small classroom immersive experience to raise their curiosity. This involved them trying to read labels/open packages and eat with reduced vision, hearing, mobility and tactile impairments. They further explored this in their home environment. Uploading and sharing experiences reinforced group cohesion and added new insights.

3.2.3 Immersion

Typically, at this stage the designer moves out of his/her office and explores the user's world. As the focus of the project was design transport for ageing populations, students were required to perform all activities involved in travelling from the university to the city rail station, boarding a train to a local station and returning. To support this 'experience prototyping', low fidelity simulations were used including a range of visual impairment glasses (to simulate glaucoma, macular degeneration and cataracts), mobility impairments (crutches, wheelchair, stiffened legs) and hearing loss. A companion looked after the students and taped significant moments. On arrival at the local station, students then took on different simulation for the return journey.

3.2.4 Connection

This was achieved in the debrief sessions. Students were given 'quick note' sheets to record their thoughts before, during and after the experience. They were required to upload and share their videos and talk about their experiences in a group tutorial. Here the student was required to connect with the user by remembering experiences and what it felt like to be in that position.

3.2.5 Detachment

This involves the student stepping back into the role of designer, to deploy the new insights into the current design task. As this exercise occurred half way through the design project, it could not shape the initial design. Instead students were prompted to comment and show how their initial design thinking and concept designs would change as a result of their experiences, for example by placing more attention on visual cues for ingress and egress of vehicles, and look at the overall customer experience of travelling with a mobility impairment.

4 OUTCOMES

4.1 Student responses

The students engaged with this study provided the following insights from their personal experience of empathic modelling:

4.1.1 Difficulty

The students found the experience much more difficult than anticipated. They were used to developing personas and characterising 'older and vulnerable users', but experiencing disabilities first hand seemed to come as a 'shock'.

"I thought it wouldn't be that difficult."

4.1.2 Vulnerability

The students were unaccustomed to feeling vulnerable when travelling:

"I felt so inadequate, frustrated and scared";

"Felt everyone was watching me and judging me";

"I felt so incredibly self-conscious and uncomfortable."

4.1.3 Cultural imprints

The British cultural trope of 'minding your own business in public' came to the fore:

"It caused a fuss. Being British no one likes a fuss."

4.1.4 Normality

The experience disrupted the students' 'normal' experience daily living.
"Disruption from normality."

4.1.5 Non-verbal cues

The experience of being mobility impaired, particularly visually, restricted how the students understood the context within which they were placed, making them feel vulnerable.
"I couldn't read peoples' faces… or their intentions."
In summary, the students found that moving through public space with impairment was difficult. Specific issues raised included the length of ramps, difficulties using (seeing) ticket machines, finding lifts and signs, navigating stairs and crossing the road safely. Additionally, students felt vulnerable and fatigued after a two-hour session. They were relieved to be able to shed their 'disabilities' at the end of the session and commented that they would not feel confident enough to go out alone with their particular disabilities. Evidence from student comments showed that their empathy horizon had changed. They now evidenced more insights into why someone might walk slowly, need support, or may be unsure where to go, and this appeared to translate out of the classroom helping them gain new insights into 'how the world actually worked' for people with mobility issues.

4.1.6 Dissemination activities

To disseminate the above insights and to capture the taped experiences the students provided during the activities, the authors are creating an online repository for use by future students which will contain videos of older people talking about their lives, the experiences of our first cohort and reading material on older and vulnerable users. Registering to this repository and adding vignettes, will provide students with opportunities for different forms of touch points with users, expand and keep the resource alive. It will also allow experiences to be transferred across year and design groups.

5 WHAT MAKES A GOOD EMPATHIC DESIGN EXPERIENCE FOR STUDENTS?

The strength of empathic design lies in its raising awareness of 'what makes life rich, personal and meaningful' [2], and so empathic designers need to be able to reflect on and use their experiences to inform their own designs and be able to communicate that to other team members.
This small study has demonstrated that the 'real life' experiences of disabilities can embed the needs of those with mobility problems within the student thinking process, in a way that may not be replicated by more distant research methods (i.e. reading, observing). Certainly, the students who took part evidenced a sense of shock at how difficult it had been to navigate through their everyday world with an impairment. In addition, briefly mentioned above, the video interviews with participants aged over 55 also produced surprises for the students. In particular, they were not expecting the participants to have such active lives, and one student, who interviewed a relative was almost silenced by the difficulties that his relative had experienced trying to look after his wife who had MS.
Students have the luxury of choosing design projects, the design decisions of which should be based on research. First hand research (e.g. through observations, field studies or modelling) whilst difficult to organize with large cohorts may have more long-term value than those, which simply survey classmates and university staff. Despite the shocks the students experienced, the walkabout was also described as fun and relevant to their studies.
Therefore, a good empathic design experience, should allow students not only to experience and thus increase their empathic horizon, but also to reflect, communicate and act upon their improved understanding. Clearly, without a user panel associated with a design course this is difficult, but opportunities should be provided within course structures or students encouraged to engage in voluntary work (e.g. helping the community) to build up knowledge of users who are different from themselves. However, such encounters need to allow time for reflection in, on and through research [3] which enables knowledge and meaning to be extracted from encounters and influence design.
Empathic design differentiates itself from scientific inquiry in that the researcher (designer/design student) is impacted (changed) by the process (the contact with participants, simulating lived experiences of users) and their perspective of users is altered. Scientific research tends not to impact the researcher on such a personal level. These design students, having conducted the empathic

modelling, had their *empathic horizon* expanded, even though, and perhaps because of, they experienced discomfort, vulnerability and frustration. Overall, the uncomfortable experience seems to have 'stuck' with them. For future design projects it is more likely that they will consider the current and future needs of users in a way they would not have without this activity. Ideally, building in additional functionality (improving ease of use and anticipating users' needs) will become part and parcel of their design outcomes, regardless of whether the client specifically requested such sensitivity to the users.

6 CONCLUSIONS

Although relatively few students were motivated to take part in this study, those who did found that they were surprised by the experiences – as young undergraduate students they were all able bodied and not accustomed to not being able to navigate quickly and efficiently through public spaces. This was particularly evident in their feedback, which showed that they felt more vulnerable than they usually did, and also evidenced a degree of heightened self-consciousness. This, it could be argued, reflects the general view of vulnerable users as 'other' – who as a perceived small minority - have needs that are routinely not considered in design activities. The students demonstrated the value of experience in their stated willingness to use modelling for future projects, and embed some of what they learnt into their existing project.

The project did require a time commitment on the part of the students and the authors of this paper. On average 4 hours a month were required by all participants to maintain levels of commitment, motivation and guarantee the usefulness of this study, outside of normal activities.

The materials gathered will form part of a growing online repository of video experiences, storytelling and research papers accessible by future design students that will be comprised of personal user experiences from around the world.

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