

BRIDGING THE EMPATHY GAP: IMPROVING DESIGN EMPATHY ACROSS CULTURAL BARRIERS

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ABSTRACT

Human-Centred Design (HCD) has become a key component of design teaching over the last thirty years. Central to HCD is the concept of design empathy, and many techniques and tools have been developed in order to encourage and help designers to gain a greater understanding of the specific difficulties, desires and behaviours of their target users.

Bournemouth University (BU) Design and Engineering students have long been encouraged to make use of HCD techniques as part of their creative design process. However, their work alongside the Royal National Lifeboat Institute (RNLI) in developing products aimed at Low-to-Middle Income Countries (LMIC's) has highlighted shortfalls in these techniques, which are often more suited to designing for the elderly or disabled rather than users from an unfamiliar cultural, social or economic background. Furthermore, an Empathy Quotient survey of level 6 Design and Engineering students at BU indicated that empathy levels were no higher than the national average despite years of exposure to HCD methods. After a collaborative project in Tanzania during which local partners were introduced to using HCD tools to encourage design empathy, the authors facilitated an ideation project using postgraduate Design and Engineering students from BU. This paper explores the issues in improving design communication and empathy across cultural barriers. Using data obtained from the UK students the authors investigate the perceived value of empathic tools, whether modern and emerging technologies could offer ways to bridge the cultural empathy gap, or whether in-country upskilling in design methods offers a more sustainable solution.

Keywords: Empathy, LMIC, empathic design, Human-Centred Design

1 THE EMPATHY GAP

In 2013, as part of his BBCTV documentary 'Don't Panic: The Truth About Population', the academic and statistician Hans Rosling conducted a survey into the general public's perception of global population, income, literacy and health. Typical multiple-choice questions included the following:

- What is the average life expectancy of the world's population?
- What is the global adult literacy rate?
- On average, men aged 25-34 have spent eight years at school. What is the average for women of the same age group?

The results were startling, revealing that in most cases British people performed worse than chimpanzees picking responses at random. Rosling deduced that the core issue was not simply ignorance:

"Doing worse than random means the problem isn't a simple lack of knowledge.

The problem is preconceived ideas." [1]

Over the past few years at Bournemouth University (BU) a significant proportion of level 6 undergraduates on the BA/BSc/MDes Design and Engineering courses have undertaken major projects to create design solutions for problems in low-to-middle income countries (LMIC's). Often these have been in the form of live briefs with the Royal National Lifeboat Institute (RNLI), and solutions have included floatation aids, child playpens and a bicycle ambulance.

In order to create effective design solutions, the students must be able to empathise with the prospective users. Given the results of Rosling's survey, and the difficulties faced by the students in obtaining direct contact with the LMIC market, the authors suspected there was a shortfall in the students' ability to

empathise with non-UK users from an unfamiliar cultural, social or economic background. This paper investigates whether these suspicions were correct, and what can be done to address this issue.

At this point it may be useful to briefly define the context within which the authors will be discussing empathy. It will not be within the scope of this paper to define empathy per se. However, it is important to note that this paper will concern itself with cognitive empathy – that is, the ability to understand another person’s perspective or mental state – rather than affective empathy (aka emotional empathy). These two components are distinct, with no interdependence, and utilise different parts of the brain [2].

2 MEASURING EMPATHY

A large number of methods have been developed in order to try to assess levels of empathy. McDonagh-Philp and Denton [3] developed the concept of the ‘empathic horizon’ to define a designer’s capacity to “empathise beyond certain characteristics of his or her group”. The Empathy Quotient (EQ) is a widely used paper-based tool designed by Simon Baron-Cohen and Sally Wheelwright at the Autism Research Centre at the University of Cambridge. The EQ comprises a questionnaire containing 60 items, to determine the ‘empathic horizon’ of the respondent [4].

2.1 EQ survey results

In 2019 the authors asked a group of level 6 Design and Engineering undergraduates from BU to complete the EQ questionnaire. Amongst a sample of 36 students only 19% of students achieved an EQ score which equated to ‘above average’. Despite participating in academic units designed to encourage students to employ empathic methodology as part of their design process, the students performed no better than the national average in the EQ test. Literature commonly indicates that females tend to score higher on the Empathy Quotient and tend to have more cognitive empathy than males [5], and this was reflected in our survey with participants identifying as female achieving slightly higher EQ scores than males.

3 USING EMPATHIC DESIGN TOOLS IN AN LMIC CONTEXT

Defined by Battarbee et al. [6] as “leaving the design office and becoming immersed in the lives, environments, attitudes, experiences and dreams of the future users”, empathic design has become a core element in design teaching, and a crucial part of the design process.

A range of tools and techniques have been developed over the years to enable empathic design, and these have been ordered into three basic approaches: looking at what people do; asking people to participate; and trying things for yourself [7]. Kouprie and Sleeswijk-Visser broke these three approaches down further into four steps: discovery; immersion; connection; and detachment (analysis) [8]. To empathise fully, a designer should engage in all twelve of these steps. In particular, direct contact is encouraged by proponents of empathic design. While this methodology is well suited to designing for groups with whom interaction is relatively easy, it can offer major problems in an LMIC context.

In the absence of direct contact, a number of ‘communication techniques’ have been proposed by HCD proponents, which involve the collection and analysis of user data by external researchers to be passed on to the designer. To improve the personal connection, it is advised that first-hand information direct from the users - such as diaries and self-taken photographs - is also collected [9]. However, these are time-consuming and costly solutions rarely available to students working on LMIC projects.

3.1 The international and intercultural divide

Differences in such characteristics as language, culture and skin colour can affect an individual’s ability to empathise [10], and lack of interaction also has a significant effect on empathy between individuals [11]. However, direct contact in the context of international design does not necessarily result in a more empathetic approach, or successful designs. Dasan and Sheldrick’s research relating to the Dyson School of Design Engineering’s experience in international collaborative design projects highlight both the benefits and drawbacks of students from different cultures working together. In common with previous researchers, they found that such projects often promise much but deliver little [12]; that they often foster a negative ‘Design Tourism’ which focusses more heavily on the benefits to the visiting students than to the receiving individuals; and that there is a very real possibility of inflicting more harm than good on the local community. In general, the result was “ineffective and poorly executed projects” [13]. However, the application of HCD, Design Thinking and empathy tools in sustainable development has gained traction in recent years. These require the design team to utilise ethnographic principles to

understand emotions and behaviours at the very start of the design process, as illustrated, for example, in Stanford University's 'ethnography field guide' [14].

Development organisations such as UNICEF have recruited designers and leading funders in the global health space, such as USAID and the Bill & Melinda Gates Foundation, and they have created dedicated roles and funding streams to increase the application of design thinking within their portfolios. Some donors – such as the GCRF fund - are even requiring it as a precondition of funding.

Design for Health [15] reports that more than 35 projects have used design as an essential component of a global health program. Positive evidence of the effectiveness of this approach is emerging and is highlighted in Bazzano et al scoping review in the PLOS ONE journal [16].

4 EMPATHIES FOR TANZANIAN FISHERS

Over the past two years the RNLI have been working alongside Design Without Borders Uganda to address the very high drowning rate amongst the artisanal fishing community in Lake Victoria, Tanzania. [17]. Co-design has been central to this project and in order to assist with this, local project partners in Tanzania were introduced to using HCD tools to encourage design empathy. In tandem with this, the authors facilitated an ideation project to design a weather reporting system for the same community, for postgraduate Design and Engineering students from BU.

In order to assess the effectiveness of the HCD tools and methods used in this project, questionnaires were given to the participating students, and the responses were analysed.

4.1 BU student survey results

The students were asked to rate the usefulness of various HCD tools both before and after the ideation project (Figure 1), as well as their perceived level of design empathy towards the fishers. They were also asked if any other sources or forms of information would have helped them to gain more design empathy. In total 22 students responded to the first survey and 26 to the second survey.

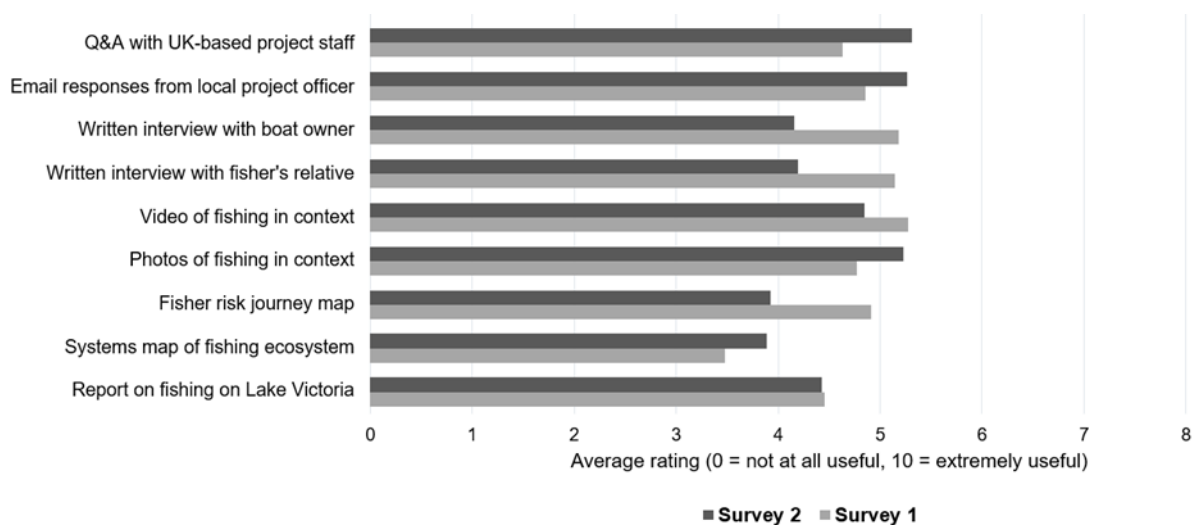


Figure 1.

Prior to the start of the project the students perceived that interviews with local boat owners and fisher's relatives would be more useful than contact with local project officers and UK-based project staff with experience of working with stakeholders in Tanzania, but by the end of the project this perception had been reversed. Despite this, several students suggested that further direct contact with local boat manufacturers, family members and the fishers themselves would have been useful.

Interestingly, while a video of artisanal fishing in context was seen as the most useful tool at the start of the project, the students actually found that photographs were a better way of gaining empathy. The fisher's risk journey map also proved considerably less useful than expected.

Overall, the students perceived a marked increase in their level of design empathy, with the average rating increasing from 6.1 to 7.6, with 85% of respondents giving a rating of 7 or more after the project compared to just 36% before.

5 TOOLS FOR THE FUTURE

One of the major barriers facing both students and professionals is access to relevant data. One BU graduate told the authors that, in his view, taking on a LMIC project could present a considerable handicap to students:

“I think the university expects a lot of students working on these types of briefs, in terms of obtaining first-hand information for hard-to-reach markets/users.”

Advances in telecommunications over the past thirty years have obviously contributed greatly to improving access to information. However, the sheer quantity and variability of the data has not necessarily improved knowledge of – or empathy for – LMICs. The widespread recognition of the “echo chamber” effect of social media [18] appears to confirm that it has a role in confirming – rather than contradicting – the problematic “preconceived ideas” identified by Rosling as a barrier to empathy [1].

5.1 Improving access to reliable data

The availability of reliable data does of course depend largely on the nature of the project, but one common issue with LMIC projects is in gaining a realistic view of the user’s way of life. One online resource that attempts to address this problem is Dollar Street.

Dollar Street was created by the independent Swedish foundation Gapminder, whose stated goal is to “fight devastating misconceptions about global development with a fact-based worldview everyone can understand” [19]. The Dollar Street website currently presents a detailed photographic record of over 260 homes in 50 countries around the world, representing a broad range of financial and cultural experiences. The key to Dollar Street’s value to designers is in the mundane nature of the items photographed: from favourite shoes to toothbrushes, cooking utensils to toilets, it provides an honest and instantly accessible window into hundreds of lives across the world.

Dollar Street’s photographic and video database is constantly expanding, and this type of knowledge-sharing offers huge potential for improving empathic design. Co-operation is key, as one BU graduate told the authors:

“It would be extremely valuable to students working on these briefs if the University and lecturers continued to build links with organisations working across the world. These links could be used to the students' advantage, as a means of helping them obtain first-hand information”.

A particularly effective method of achieving this level of co-operation would be through a community of practice. Such a resource would provide a repository of pooled knowledge and resources that would expand over time, as well as creating a social and professional network of experts, students and practitioners. While communities of practice have been long established in fields such as agriculture and education, their adoption in design has been surprisingly slow. An effective LMIC design community of practice would be a hugely useful resource for tackling the international empathy gap.

5.2 Direct communication

Much of the problem in obtaining reliable information stems from the editorial and subjective nature of much of the content of the web. Information on LMICs is rarely received direct and unfiltered. Direct communication with potential users is therefore a key strategy in improving empathy. Of course, international telephony has existed for well over a century, but it is the use of email and apps such as Skype and WhatsApp that have truly changed the landscape for young designers by offering free international communication. Video calling in particular provides a hugely valuable aid to empathy, as it offers both parties a more immersive, informative window into another person’s environment.

Since the advent of the Coronavirus epidemic, video platforms such as Zoom, Skype and Microsoft Teams have rapidly become mainstays of the educational landscape, and out of necessity many students have found them to be a hugely valuable tool in conducting research. The new-found access to, and familiarity with, these platforms could prove to be a major boost for empathy in international projects. More of an issue may be the restrictions imposed by ethical codes of practice on research, which may prevent many University students from directly contacting stakeholders in other countries.

An interesting development in the area of communications is the promise of ‘holographic’ technology. In 2017, US company Verizon and Korean Telecom trialled the world’s first live international hologram call, and further similar ‘early stage’ trials have taken place in many countries. While these trials have required the use of virtual reality (VR) headsets, Richard Foggie of the Knowledge Transfer Network

believes that the 5G network has made ‘true’ holograms achievable in the near future: “within five years I think we’ll see AR/VR [augmented reality/virtual reality] just sprout out of the phone.” [20] Using different technology, Imperial College in London has experimented with ‘holographic’ lecturers, beamed into lecture theatres via glass screens and careful lighting. While this technique does not create true holograms, Imperial’s Dr David Lefevre believes the effect provides “a greater sense of presence” than standard video conferencing: "So long as the technology works the way we believe it will, I can see this becoming fairly mainstream." [21]

5.3 Virtual reality environments

The use of VR is not limited to creating ‘holographic’ conversations. Organisations such as Oxfam and Greenpeace have made use of the technology to provide an immersive experience to potential donors as a fundraising tool, giving users the chance to explore the Amazonian rainforest or war-torn Iraq [22][23]. The corresponding reported increase in donations may appear to suggest that VR increases empathy, but the research suggests that the truth is a little more complex. The VR lab at Stanford University has been investigating the link between VR and empathy for 15 years, and their results conclude that the most important element in the VR experience for promoting empathy is physical movement [24].

The RNLI - working alongside BU, University of the West of England, University of Southampton and the Centre for Injury Prevention and Research in Bangladesh – is currently engaged in a four-year project which plans to make use of VR technology in this way. By recreating existing village environments in virtual space and allowing UK-based researchers and designers to move around them from the perspective of both children and adults, the project aims to improve empathy in devising solutions to the very high drowning rates of young children in Bangladesh.

6 A FUTURE SHIFT IN DESIGN EMPATHY?

It can be argued that empathy is an essential skill for the designer. Empathy tools are seen as an integral part of the design process, that can be used to create useful insights about the user and inform optimal form and function. But what if the end user becomes the designer instead?

On early evidence, the RNLI’s attempts to introduce local project partners in Tanzania to HCD methods to address drowning rates on Lake Victoria have drawn a favourable response from participants. Similarly, Design Without Borders has also implemented this approach in Uganda by upskilling South Sudanese refugees and local partners in design methods to create their own change [25]. This approach negates the need for an empathy driven “design for” approach. ‘Participatory Action Research’ (PAR) takes a similar but distinctive approach in that it actively educates the user to conduct their own research, reflection and change [26], again alleviating the empathy gap issues described earlier in this paper.

The authors are currently engaged in the forementioned four-year project to address the drowning rates of young children in Bangladesh. This project is also planning to upskill a local team in HCD methods and engage the local communities in the design process. Co-design will be central, and it is hoped that more insight on the validity of in-country HCD upskilling for sustainable co-creation will result.

Approaches such as this may see a shift away from tools that enhance the empathy of the distanced designer and towards empathy being naturally embedded locally as part of the co-creation process.

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