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643. Global Health Challenge: case study of a co-designed interdisciplinary initiative with local organizations in support of internationalization of curricula

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ABSTRACT The educational practices of design and health care are changing because of the extremely complex problems being faced within contemporary society, moving beyond individually practiced subjects towards more collaborative, interdisciplinary team-based activities. To this end, education is exchanging knowledge, skills and experiences in more ambitious ways in an effort to mobilize knowledge and connect diverse subject expertise in an agile manner. It is doing so as a means of unleashing an individual and collective capacity for creativity, enterprise and innovation, in commercial and social forms. It is doing so in order to nurture an entrepreneurial mindset while offering unique real-world learning experiences and genuine exploration of alternate futures. The authors build on creative methods and the concept of co-design to develop a framework that provides a platform from which the value of new, community based interdisciplinary teams working on global health challenges can be critically discussed. Furthermore, this case contributes to the increasing awareness of design as an alternative strategy for enabling entrepreneurship while also facilitating, the potential for social and cultural transformation in design and health care, and education more broadly. It does so by indicating pathways and further application of creativity, design research and medical knowledge in the everyday world of everyday people. It closes with critical reflections and phase one insights into how universities can deliver creative learning opportunities that contribute to city life and its healthcare while concurrently addressing the internationalization of curricula for sustainable solutions to global health challenges.

Keywords: entrepreneurial; collaborative; interdisciplinary; social justice; health and social care; design.



Introduction

Never before has the world been so interconnected. New technology has allowed unprecedented developments in the fields of design, education and health with rapid exchange of information and ideas. Concurrently, inequalities between the rich and poor are increasing with many people missing out on these advances. For example, it is a stark fact of the 21st Century that two million children under the age of five die every year of pneumonia and diarrhoea, many cases of which could easily have been prevented; 780 million people are without improved drinking water sources; and 2.5 billion people lack improved sanitation facilities. The majority of these people live in the poorest households and within rural communities. However, many of these issues are truly Global. Poverty exists in resource rich as well as resource poor countries – though it may manifest in different forms. *'Global Health'* is therefore something that should concern everyone.

Global Health can be defined in different ways. Perhaps one of the most useful is the definition from Koplan et al (2009): *'an area for study, research, and practice that places a priority on improving health and achieving equity in health for all people worldwide. Global health emphasises transnational health issues, determinants, and solutions... and is a synthesis of population-based prevention with individual-level clinical care.'* This clearly looks beyond the health outcomes themselves to the causes and indeed the *'causes of the causes'*.

'Think Globally, Act Locally' is an aphorism attributed to a number of different sources. However, it encapsulates a sentiment that it is often very challenging to make a difference to problems at a global level but much more possible to do something locally on a small scale – in this case in Dundee. Many of the major Global Health issues are visible locally in the microcosm of Dundee in Scotland. However, underpinning them all are social inequalities.

Life expectancy still differs across the city. In a 2017 report the life expectancy at birth was 76 for males in the least deprived areas of Dundee but only 68.8 for the most deprived. The corresponding figures for females were 80.3 and 76.3 (National Records of Scotland 2017). The causes are multifactorial but many, if not most, relate back to the social inequalities which persist in the city. Some of these have been highlighted in reports, for example *'Gathering Experiences of Poverty in Dundee'* (2015) and include financial problems, in-work poverty, unemployment, poor standard of accommodation, education, mental health. Substance misuse and HIV / AIDS remain major challenges. Homelessness is also a major issue (Dundee Drop in Survey 2015).

However, there is a genuine sense of collaboration and determination to find innovative solutions that involves the City Council, business, the universities, schools as well as many charities (Dundee Fighting for Fairness 2018).

The challenge of Global Health, in part and as perceived by this work, is not poor investment or inadequate knowledge, low level innovation or an insufficient amount of passionate people. The challenge is to move co-design and holistic thinking into central strategic positions for healthcare to



create deeper, sustained interdisciplinarity and, to achieve an alternative model of practice through knowledge exchange.

To explore this problem, we use creativity and designerly thinking as a theoretical framework for mobilizing knowledge exchange across a local community and nurturing greater participation from people with diverse backgrounds. With attention to the academic context, specifically higher education institution (HEI) teaching and learning, we ask: how do people from communities across a City, form interdisciplinary teams and where, if at all, is there potential for sustained social and cultural change?

To examine this, the paper introduces Global Health Challenge as an approach to designerly thinking, specifically the method of co-design, to help facilitate social and cultural change across a community.

Creativity and CoDesign for Fostering Interdisciplinary Learning

Creativity is seen as playing a central role in helping address the challenges emerging from rapid change, in driving innovation, supporting social and economic advancement (European University Association 2007), fostering enterprise and entrepreneurship and driving the digital economy (McWilliam and Dawson 2008).

In higher education the notion of a creative graduate tends to be somewhat narrowly focussed on creative disciplines such as art, design and music. As a quality and skill creativity is conspicuous in its absence in many of the graduate attribute frameworks developed by higher education institutions (Rampersand and Patel 2014), and even in national frameworks such as the one developed for the Scottish Higher Education sector (QAA 2011). In disciplines such as medicine, there is a perceived cultural bias against creativity as the focus is on ensuring students learn the critical facts needed to become a doctor (Green et al 2016).

Creativity within medical education suffers the same pigeon holing as elsewhere, it tends to be discussed in the context of students creating artistic works (e.g. Green et al (2016). At the heart of the Global Health Challenge (GHC) is an understanding that creativity is much more than this and that community rather than the individual are central to nurturing creativity (Csikszentmihalyi and Sawyer 2014). The GHC provides a collective safe space for students to problem solve and co-design solutions to wicked problems faced by groups in their local community. In doing so it provides an opportunity for human-centred activity through interdisciplinary learning and change based on the intersection and partnership of healthcare and design (Nöel and Frascara 2016). It has parallels with the new curriculum at the Dell Medical School in Texas which seeks to train future health leaders who can apply design thinking and work creatively to solve systemic problems (Nagy 2015) through a collaboration with the College of Fine Arts.

Elizabeth Sanders and Pieter Jan Stappers (2008, 6) describe 'co-design' as 'collective creativity as it is applied across the whole span of the design process'; it is a specific case of 'co-creation', that broadly describes 'any act of collective creativity'. This view empowers people during the process (ibid),



engenders compromise during the process, and promotes shared ownership of outcome (Sanders 2010).

Studies also show that engaging people in co-design processes and co-production techniques helps promote creativity, and can lead to social benefits, such as stimulating positive behaviour changes and encouraging self-help attitudes (Boyle and Harris 2009).

Case Study: Dundee Global Health Challenge

Two projects are now used to exemplify global health challenges and how the interdisciplinary approach to GHC increases design as an alternative strategy for enabling entrepreneurship (in terms of social innovation) while providing a basis for critically reflecting on the impact of interdisciplinary team working, and collaborative partnership with local community groups.

Example 1: OpenEars

One in six people experience some form of hearing loss during their life time. *Open Ears* team found that those who are deaf or hard of hearing are commonly mistreated in multiple ways on a daily basis. In particular they found healthcare settings to be acutely challenging. For example, people going to the audiology department can miss their appointment because they do not hear their name being called out, as there is no screen displaying whose turn it is to be seen. This basic oversight inspired the team to further their research and development, speaking directly to members of the community to begin understanding their reality better. A key insight was very low awareness of the issues of the deaf and hard of hearing. As a team, they learned there are small changes everyone can make to help make a difference. These changes begin with empathy. The *Open Ears* team goal was to raise awareness of day-to-day issues that people who are deaf or hard of hearing face, and to empower the public to communicate better by providing helpful tips and tools. The team also sought to empower the deaf community to speak up and receive equal treatment in everyday society.

In response the team created a product to help improve awareness. It comes with ear defenders, ear plugs, a mask and different cards which simulate different scenarios. Their final idea is captured in a short [8-minute film](#), with a short Q&A session with some members of the team to help others with their future journey (Global Health Challenge, University of Dundee 2016). The values underpinning the designed experience are fun, interactive, engaging, sustainable, and educational. It includes cards with tips to help and also an instruction card which explains how the toolbox works. In this way, the intention is to encourage society, in a relatively immediate manner, how to become mindful of the issues and subsequently make changes to people's behaviour. There is no need for training and, no facilitator required which means it can be used anywhere by anyone. It is not too big in size and therefore fits neatly on a shelf in a small room.



Following this initiative, the team voluntarily developed the concept and its physical expression by entering the national competition Converge Challenge, and in doing so were successful in becoming finalists in the social innovation category.

Example 2: Dundee University Against Poverty Society

Exploring the challenges of living in fuel and food poverty, this team discovered they were living in the fuel poverty capital of Britain. They learned that one in four children in Dundee lived in poverty and the Dundee foodbank fed over 9,000 people in one year alone. Working with Faith in Community, a charity working in the poorest communities in Scotland to tackle deprivation and create a more inclusive environment, the team moved beyond statistics and explored the human stories underlying them. Jack was one of these. He had been his wife's main carer and he had been given a house and a car to support her. Just weeks after she passed away his benefits stopped, and he was evicted. Introductions to a wide range of local agencies along with visits to a range of charity-run community centres and drop-in services across Dundee that provided hot meals and food parcels to those in crisis situations revealed similar stories and further insights.

The team identified a pattern of problems across these charities such as mental and physical health, stigma, engagement, food and fuel poverty and education. The lack of education around food was a massive issue, with many people not having the skills or equipment to cook cheap and nutritious meals for themselves. They considered developing a set of cookery classes, cookery videos and cards. Further research indicated that cookery classes were already running and that online videos would not be accessible as their target population had no internet access. Other groups were also already producing cookery cards.

Realising their ideas were doing little to enhance existing services, the team identified the real need which was to improve networking between the existing local organizations. There were also challenges around volunteering and concerns of sustainability due to an over reliance on older volunteers.

Here was an opportunity to get a big student population engaged with the local community by establishing a new society, Dundee University Against Poverty. Local agencies were very receptive to this idea and further dialogue revealed that whilst some did not face problems with volunteers, they had other issues they felt students could work in partnership with them to address. The Society has formally launched and is actively networking across Dundee charities, promoting volunteering opportunities, and at the end of the 2018 academic year collected hundreds of items from students to create starter packs for people who were previously homeless and moving into accommodation. They are exploring plans to develop a pay forward scheme for hot drinks and food to support those struggling, through the mobile YoYo Wallet app that could in turn be distributed through their links with local food banks.



Critical Reflection and Insights: phase 1

How can universities deliver creative learning opportunities that contribute to city life and its healthcare while concurrently addressing the internationalization of curricula for sustainable solutions to global health challenges?

On one level, GHC explores how best creativity can be used to nurture greater engagement with people in a variety of creative activities to foster change. It is an example of how co-design is used as a means of achieving collective creativity, making an impact on generating social and cultural value, including societal engagement and positive change in attitudes and behaviours. The city therefore is providing an ideal crucible for collaborative working between students, staff and local organizations to work together with local communities to develop practical local solutions to real-world Global Health problems. At the same time, it is helping to educate students, who will be the leaders of tomorrow, about the social issues around them.

We observe the social value that is generated through ideation, creation and implementation of new ideas about how people organise interpersonal activities and social interactions to meet common goals, and how the GHC process is helping social enterprises meet their business needs in a way that achieves value for money in a holistic sense as the human centred relationships are generating benefits to society (e.g. increase number of volunteers) and the economy (innovative new product and service design, and societies).

Summary and Closing Remark

GHC fosters creative people, communities and organizations in an inclusive manner through a combination of imaginative interventions, shared social learning spaces and online learning resources. By design and through carefully curated facilitation, it embeds an entrepreneurial character in how to develop genuine solutions when tackling the thorny problem of health equality under a range of themes. Each person is gifted with learning and practicing five skills for enterprise: creative problem solving; deep listening; immersive empathy; networking and visualization. Everyone at each stage is encouraged to see the world differently, to be concerned with social justice, to lead with questions and uncover deep insights – receiving input and partnership support from local organizations, industry speakers and recognized mentors from business, design, healthcare and academia to inspire and inform their work on innovation.

The case presented in this paper derives from the first phase of delivery and is an introduction to the problem, methods and process. The next stage is to conduct interviews with the partner organizations and, through a survey with students, ascertain where, how and what, (if any), are the sustained changes to social and cultural change being nurtured by GHC.

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