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Well-making in social design – opening the potential for makerspaces in social design projects.

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Abstract

This paper highlights wellbeing outcomes reported by participants in three social design projects where making has featured as a community engagement and research tool. The spaces created through the projects are framed as makerspaces, defined as physical locations where people gather to ‘co-create, share resources and knowledge, work on projects, network, and build’ (Department for Digital, Culture, Media & Sport (DDCMS) 2017: n.pag.). Using reflections from the perspectives of two practitioner researchers on co-designing, making and using these spaces, the paper contributes to the ongoing development of the Well-Maker-Space concept (Gant, Hackney and Hill 2018). The aim of this paper is to expand understanding of how makerspaces as a social design tool benefit participants and communities. Using evidence generated through art-based research of ways that making with others contributes to wellbeing, we propose that makerspaces in social design projects can proactively support wellbeing alongside other social and environmental outcomes.

Keywords

makerspace, wellbeing, making, social design, community, well-making

Introduction

This paper documents the creation of makerspaces as a distinctive methodological approach within social design. Social design is a practice that uses design methodologies to work with groups of people to address complex social and environmental problems (Resnick 2019). The social design practices described in this paper centre collaborative making as a community engagement and research tool, and this is an established practice and research focus for both authors. By highlighting the wellbeing outcomes reported by participants within these

makerspaces we propose that including makerspaces as a means of community engagement can be designed to explicitly support the development of wellbeing in addition to the social and environmental aims of such spaces.

The authors have both used participatory making as a research tool on a number of discrete projects and collaborated on producing academic workshops and events to specifically explore connections between wellbeing and making. This paper is a product of this ongoing conversation about their respective practices. Both authors self-identify as designers with a background in industrial design and making who have undertaken extensive social design work in grassroots community sites in the United Kingdom and overseas, as well as working in education.

This work is situated within the context of the growth of maker culture that is shifting the relationship of the wider community to the production and transformation of material objects. Maker culture is often associated with agendas relating to the democratisation of innovation (Smith 2017) for new modes of localised production and invention (see Anderson 2012; Hatch 2014) and with the expansion of maker culture evidence is accumulating for a range of wellbeing benefits to be gained from participating in making as an activity. This paper proposes that where making is used as a community engagement tool in social design, designers can expand the reach and impact of their social design work by acknowledging and designing with the potential for contributing positively to participants' wellbeing alongside other social goals. This is the narrative around which this paper is structured, starting with understanding maker culture and the evidence for making as contributing positively to wellbeing.

Maker culture

Making has had a resurgence in recent years and forms a dynamic aspect of the contemporary cultural landscape in many areas of the world. Makerspaces can come in many different and nuanced forms (Cavalcanti 2013), defined as 'communal spaces where people get together to make things' (Hatch 2014: 18). Maker culture as a complex set of social, place-based and open innovation initiatives is changing how and where things get produced, by whom and for what purpose. There are critiques that contest notions of equality, accessibility and representation (see Steele et al. 2018; Smit and Fuchsberger 2020; Seo and Richard 2021) however making and makerspaces offer possibility that many of the distinct and similar issues we face can be

addressed by literally *making change* at a local level. It could be said that, for the most part, they are seeking to make-well (see Gant et al. 2018).

Wellbeing and making

Evidence of the wellbeing benefits of making continues to grow. Recent studies commissioned by the British Broadcasting Corporation (BBC) extend the evidence base for creativity's positive impact on wellbeing through improved self-esteem, mood, and reduced anxiety (BBC 2019) with crafts and making, in particular, helping overcome hardship and emotional issues (Crafts Council 2018). Female knitters reported awakened feelings of anticipation, excitement, pride and happiness (Corkhill et al. 2015) as well as meditative calmness, distraction from chronic pain and improved resilience. Growing networks of Men's Sheds recognize a range of social, psychological and physiological benefits for participants (Morgan et al. 2012) including reduction in depression (Culph et al. 2015). Even in acute challenges to wellbeing such as natural disasters, crafting together has been recognised as beneficial in disaster recovery (Maidment et al. 2013). The range of evidence that making contributes positively to wellbeing is the basis on which we propose that wellbeing must become a recognised outcome for makerspaces in social design.

Making design social: Well-making in makerspaces

The makerspace examples referred to in this paper are all located in social design projects. Defined as 'participatory approaches to researching, generating and realising new ways to make change happen towards collective and social ends, rather than predominantly commercial objectives' (Armstrong et al. 2014: 15), social design has emerged from a history of scholarship and practice seeking greater social and environmental responsibility in design. Developing from the Arts and Crafts movement, through Buckminster Fuller (1969) and Victor Papanek (1984) by way of eco-design projects in the 1980s and 1990s, social design is grounded in thinking about sustainability. From this starting point emerged a focus on the interconnectedness of social and environmental problems (Thackara 2005; Chapman and Gant 2007), and calls for participatory design approaches (Manzini and Jegou 2004; Sanders and Stappers 2008) to address these complex problems. Participatory making as part of social design has developed in part from human-centred design practices (Ideo.org 2015) where community modelling and prototyping are

an established part of collaborative product innovation, and through the emergence of makerspaces and maker culture. Understanding the history of social design in this way places sustainability, participation and making as fundamental components of the shared approaches to social design explored here. Within this form of social design we propose that makerspaces are a key component in our social design projects.

As a subject of academic research there is a small and growing body of literature discussing how makerspaces work for participants. The following examples suggest that engaging with the world in a productive way through which makerspaces can build social and technical skills and confidence and that the experience and joy of making itself can be of fundamental significance and makerspaces offer a range of diverse opportunities for wellbeing despite it rarely being an explicit goal (Taylor et al. 2016). For example, Burt and Atkinson (2011) discuss how fourth generation care home residents have demonstrated being empowered by access to makerspaces to solve everyday problems, fostering companionship, literally 'making' personal connections and gifts for loved ones and enabling cognitive improvements. Also in care homes, memory recall and regaining agency and control through different making processes and technologies that grow competence, autonomy, relatedness, and identity are documented in research by Carucci and Toyama (2019).

Makerspaces developed to support more sustainable interactions between people, products and place (such as repair cafes) further diversify notions of environmental wellbeing as part of social and personal wellbeing. Online makers cooperate in ways that broaden both geographies and platforms as 'spaces' for inter-personal, well-making (See Collins in this issue). Interactions with technologies enabled within makerspaces can improve confidence in users usually intimidated by the culture and skills associated with contemporary technology (Moore et al. 2021). Makerspaces have opened up who is involved in making (Vyas 2019) that, in turn, may 'make' for healthier and more diverse maker cultures. The range of this research on makerspaces and the benefits to participants suggests that there is already an evidence base for using makerspaces to empower, build confidence, and support participant wellbeing. In this paper we are contributing to this body of literature by adding a proposal that where makerspaces are included as a social design method, the opportunity to promote greater wellbeing alongside addressing social and environmental problems should be designed in as part of the brief for the makerspace, to become a Well-Maker-Space.

In the following case studies and discussion the authors reflect on the makerspaces that have become an established part of their respective practices. For Katie Hill, making together with groups of people for the purpose of social goals has been part of this social design practice from the beginning, with experiences as a teenager teaching crafts to younger children in a church group and first working professionally as a facilitator of making for wellbeing at a Housing Association Support Centre soon after graduating from an undergraduate degree 20 years ago. Making methods have characteristically been ‘hands on’ using simple and accessible materials and skills to support complex thinking and communication through and around the making activities. Nick Gant’s initial background in industrial design led into an understanding that thoughtful communication and augmentation of the material world can engage people in a process of meaningful change. Gant’s makerspaces are designed to inspire people to take part in activities for their own sake, whilst engaging them in wider social and environmental issues and enabling them to reveal their own narratives of lived experience through making.

Makerspace case studies

The following three case studies were funded and delivered through academic, public and private sector collaborations. Collaborative making is integral to each, considering the agency of different forms of making (means) in support of wellbeing (ends) in different contexts. They provide insights into making that can redefine opportunities for personal improved public health, enfranchising marginalised individuals and in supporting communal engagement with improving environmental outcomes for communities.

Makerspace 1: the Wiki-Waste-Workshop (2016)

The focus of this project was to provide new opportunities to reverse negative impacts of waste in a township community in South Africa. It is part of an on-going collaboration between University of Brighton design researchers and students, the Community21 research group (community21.org) and the Dreamcatcher Foundation (dreamcatchersouthafrica.com) that leads development work with the Melkhoutfontein (MKF) community in the Western Cape, South Africa. The research and community team were focused on making as a means to transform waste materials dumped in the MKF neighbourhood, however the development of a collaborative making approach led to a range of wellbeing outcomes.

The makerspace initially consisted of an online co-making space between designers in the United Kingdom and the community in South Africa. Online calls between a community building in MKF and a studio in the University of Brighton enabled conversations about the negative environmental impacts that poor waste management was having and what materials were available in the locality in South Africa. These included problematic plastics from food packaging alongside an invasive pest shrub (*Acacia Cyclops*) that had decimated local flora. The MKF community shared some of the skills of older women (*Kamammas*) that included stitching. United Kingdom researchers shared their skills and processes that could utilize abundant waste plastics including melding them together using a T-shirt press to make new sheet materials.

<INSERT FIGURE 1 HERE>

Figure 1: *Research staff and students and community members conversing about making methods through internet video call, 2016. United Kingdom and South Africa. © Tanya Dean.*

The two groups proposed and made objects and communicated these back and forth as part of an iterative conversation, learning from each other. The MKF community reported being inspired to re-engage with their local natural history and cultural heritage and develop their creative capacity as part of a remote-but-connected community makerspace. The United Kingdom team learned new skills as the MKF community adapted and co-developed processes, and they could see how their skills could be applied in a very different cultural context and the agency that can develop through collaborative making.

<INSERT FIGURE 2 HERE>

Figure 2: *Members of the community co-making with new techniques using recycled plastics, 2016. South Africa. © Matilda Grover.*

Students demonstrated techniques to the community and women from the community demonstrated how they sew and have adapted the techniques introduced from the United Kingdom– the resulted materials and objects combined these skills in the form of aprons for their local cooking enterprises, school bags to meet a local need, and bags to sell in new enterprises. Semi-structured interviews were conducted with participants in the township community. They revealed how through co-making to change the negative aspects of their environment they had

developed a sense of agency. They also reported how the process has supported social cohesion, confidence, learning and communication.

<INSERT FIGURE 3 HERE>

Figure 2: *Deb shows bag made using her sewing techniques combined with new, pressed recycled carrier bag techniques*, 2016. South Africa. © Dani Lane.

The following quotes give a snapshot of how these wellbeing outcomes were reported:

I am more confident to talk to people and what we are doing here... I agree with it [using waste] it goes into the landsite and all the animals is dying because of it, burning up there by the dumpsite the smell of it making you sick.

(Older female participant two).

It is a positive things to work with waste – I talk about it to my family. I am enjoying it because I know nothing but I am learning a lot...I am becoming better...I learned it...to know what to do with the waste...I don't know it but I learn now [...] I do a purse it is very beautiful for me, it's lovely.

(Younger female, participant one).

I didn't know I could do something like this from plastic but for me its good to be part of a community of waste its nice to be recycling.

(Older female, participant two).

The project led to the development of a permanent 'off-grid' makerspace in the community, spawning a further forty enterprises all utilising individual variations of the co-devised techniques. The objects generated can be seen as *making research* in that they provide repeatable and developable prototypes that reveal routes to new enterprise, personally driven innovation and start-ups as well as social relationships, opportunities and ventures (Hatch 2014).

Wellbeing outcomes are incidental in the research. Forming ‘virtuous-circular-economies’ (Gant 2016) of material transformation that supported recycling through collaborative making also promoted social change and improvements to individual’s wellbeing and that of the community. In the pursuit of more ‘circular’ means to manage (what-would-be) waste materials, re-making in collaborative spaces online and in physical locations the project unearthed the potential to provide multiple wellbeing benefits for the community. These were stimulated and facilitated by making together. Moreover, the materials, objects and artefacts and new design, craft, entrepreneurial, ecological and social skills form part of a cultural collaboration and change - souvenirs of activism, collaboration and agency enacted through making for both South African and United Kingdom participants.

Makerspace 2: Place-Maker-Space (2016)

The Place-Maker-Space sought to examine the notion of an Urban Room. A concept developed in the government’s Farrell Review (2014), the Urban Room is a physical space to bring together the emergent cultures, practices and theories of *place-making* and brings them into a *makerspace* as a means to support better collaborative envisioning of the city and bottom-up planning in the United Kingdom. The Farrell Review recommended that every city should have an Urban Room to facilitate collaboration between universities, developers, and communities in the collective design and envisioning of the future built environment. This corresponded with radical changes in planning legislation brought about through the Localism Bill (DCLG 2011) and National Planning Policy Framework which sought to empower local communities to have greater influence in the future of their neighborhoods. However, despite policy recommendations, literature (see Cornwall 2008; Wates 2014; Parsons 2015; Collin and Swist 2016) reports that there are few tools to enable communities to act upon these affordances.

The Place-Maker-Space brief generated by local stakeholders was to collaboratively design a space and a set of tools to support the collaborative making of future visions of the neighborhood. It was to be constructed within the neighborhood directly affected by future developments, helping to include underrepresented members of the community.

<INSERT FIGURE 4 HERE>

Figure 4: *The Place-Maker-Space*, 2016. Brighton, United Kingdom. © Nick Gant.

The process of co-making employed hybrid digital and physical making of future visions developed by local people – the methods themselves stimulated interest and engagement (Davies et al. 2016) and provided the basis for expressing concerns, aspirations, ideas, concepts, hopes and fears for the future.

It's the freedom we have to have an opinion and to make things that give us a voice
(Young female, participant).

The act of making formed a focal activity to materialise and articulate ideas, but also stimulated the exchange of views and sharing between disparate and often disenfranchised community members and stakeholders affected by change.

We need places like this that support cohesion...[Ibid] you would never normally get an eight-year-old girl and a twelve-year-old boy working together on something relating to their community
(Youth worker).

Participants communicated wellbeing benefits formed through collaboration, social cohesion and connection with different, fragmented and dislocated sectors of the community and modes of communication (through making and made outcomes) that gave them a voice. Their *made* visions were communicated to local stakeholders, developers and politicians and members of parliament and the government.

No-one wants to create something shit as it makes you feel shit – this place helps us make things properly that present our ideas properly and it's cool too
(Non binary, participant).

The project generated insights into the practical role and agency of making (in-and-about-place) within a makerspace as a hybrid model and hypothesis. An actual Urban Room, it provided data and evidence informing policymakers and practitioners.

Figure 4: *The Place-Maker-Space co-making visions for the future of the neighbourhood*, 2016. Brighton, United Kingdom. © Nick Gant.

Maker-space 3: S4S Designing a sensibility for sustainable clothing (2019)

The aim of the S4S project (<https://s4sproject-exeter.uk>) was to engage community participants in pro-environmental behaviour change related to clothing through making workshops. As described by Graham et al. (2015), workshops are a place and a process for both making change happen and observing change. The workshops in this project brought together community participants, designers and researchers to co-create temporary makerspaces. Working in two geographical locations (rural South West and urban centres in the West Midlands of the United Kingdom) the makerspaces were located in a range of arts and environmental organisation premises, as well as in university accommodation. These makerspaces were open for full days on Saturdays and groups of up to fifteen participants at a time worked together on making, unmaking, repurposing, and remaking clothing. The temporary nature of these makerspaces, and their location in spaces with other purposes and some 'public' spaces has potential to widen the reach of such projects and was part of the research project recommendations to the United Kingdom Government Environmental Audit Committee to promote clothing repair spaces on the high street (West and Saunders 2019).

The approach was framed as a social design process and planned around the lifecycle of fabric and clothing (Hackney et al. 2021). A series of eight five-day workshops took participants through a sequence of textile processes that reflected the journey that fabric makes: from dyeing and weaving fleece into fabric to working with post-industrial and post-consumer textile waste. Designers were employed to teach making skills at each set of workshops, and researchers and filmmakers facilitated reflective learning activities such as keeping reflective journals and making short films about the workshops (Hackney et al. 2019). There was a dialogue between the groups in the two locations through the co-design of collaboratively made objects, and the communities at both sites produced an end-of-project event to invite academics, designers, third sector stakeholders, and the public to discuss research findings and see the S4S pop up exhibition, which displayed films, clothing diaries, photographs, text, and hand-made items developed in the project.

Through collecting participant reflections and following some of their journeys through and beyond the project it became clear that a number of wellbeing outcomes emerged. Wardrobe audits and in-project films in particular revealed how participation in the project had supported participants through significant life changes (in employment, children leaving home, for instance), building a sense of connection and community with each other and with the environment, and acting as an incubator for project and business ideas creating a sense of agency and increased confidence to realise personal ambitions (Hackney et al. 2021). The following quotes are from the reflective learning interviews conducted as part of the filmmaking process and show how participants articulated the wellbeing outcomes they experienced from making together:

It [the project] is giving me permission to be more creative and go back to some of the things I used to love doing but then wasn't doing for lots of different reasons. So, these workshops are opening some doors that have been closed before.
(Female participant)

The good things about this project have been the community of doing things and making things together, that space for people to spend time together because so much of life now is separate families or separate people in their own homes with their doors shut, and high fences in the back garden and not going out and doing things together. So I think that's a huge part of it. And having people who know what they're doing, so that sort of community of sharing skills and expertise and knowledge.
(Female participant)

I've dabbled in the concept of myself. I've had some changes in the last couple of years in my circumstances, which means I have had more of an opportunity to make some bigger changes without the pressure of being in a commercial environment. So I can experiment a bit more freely. I'm more aware - I felt a bit isolated in terms of wanting to be more sustainable. Because there's still quite a lot of pressure to buy, to be seen in certain things. I don't feel part of that group but

the pressure is there. But I feel more able to step away from that a little bit more than I did before.

(Female participant)

In Hackney et al. (2021) we discuss how the project methods helped participants to negotiate and reimagine self-identities and new futures for themselves, particularly at times of ‘rupture’ (Woodward 2007). We also recognised that being part of a community or group supported changes to habits, helping new behaviours to persist. The focus of the project was on behaviour change and these conclusions speak to that aim. Revisiting the project here these quotes show that there were clear wellbeing benefits to working in the makerspaces – reducing isolation, building social connections, and getting back to doing things that are loved and important. Even though the focus of the project was elsewhere, a strong narrative around wellbeing emerged in the project outcomes in ways that had not originally been anticipated.

Discussion

The three projects described in this paper are social design projects that include collaborative making or making together as a method for achieving change: managing problematic waste materials, engaging people in development of their local community, and pro-environmental behaviour change in relation to clothing. In each case, health and wellbeing aims were not the primary objective, but participants in all projects reported wellbeing outcomes.

The outcomes that have emerged through people making together for very different social, cultural, and environmental purposes highlight the well-making possibilities of makerspaces as deployed in social design projects. As such, these spaces might be conceived of as spaces in which to further test the value of making methods in achieving multiple outcomes: personal expression; engagement with cultural and environmental issues; and promotion of wellbeing in individuals and communities.

The deployment of distinct making methods, which were designed to be inclusive and accessible, resulted in credible outcomes that generated pride, keenness to share, and personal, economic opportunity. We argue that it was the methods of making together within the physical and digital makerspaces that enabled the realisation of outcomes that contribute to local and

global unresolved causes (e.g. political issues, changing neighbourhoods or recycling) that in turn generated the wellbeing outcomes of a sense of self, community, empowerment and agency.

Making Research

Methodologically the case studies enact academic enquiry through artistic action, supporting stakeholder and participant interactions that seek to address issues and make positive change. This is both practical in its delivery of opportunities for change but is also investigative in its collaborative and collective endeavour to understand how change can happen. Making is a social design research method as a defined part of exploring social ‘process’ through the realisation of social ‘product’. Elaborating on foundations of *Research-Through-Art* (or *Design and Making*) (Frayling 1993) this helps researchers and participating communities understand and examine experience (McNiff 2008). This is often activated in communal spaces and relates to art-based research that acknowledges creative spaces that facilitate interactions with arts as a catalyst for well-being outcomes - connecting learning and healing (Alfonzo 2018), connecting people to arts and each other (Madsen 2019) and building the resilience of resilience (Ma and Penner 2018). Making and makerspaces as creative methods afford opportunity to develop appropriate means to research with different communities and contexts (Fleetwood-Smith 2021) through elaborate but meaningful initiatives for joint knowledge formation. We argue that social designers working with collaborative making as an engagement tool are often creating wellbeing outcomes with participants, and that the art-based research evidence establishes a wide range of ways that engaging in creative activities supports wellbeing. This can be a resource for social designers to deepen understanding of the wellbeing implications of our design methods, particularly makerspaces. Our examples and material from participants draws across themes that link broader community benefits of working creatively on collective problem solving such as building resilience and community engagement with individual health and wellbeing outcomes.

Conclusion

Makerspaces, as our case studies show, can perform a variety of roles beyond their expected uses (Taylor et al. 2016). Considering wellbeing in relation to making broadens the definition of makerspaces, and by including makerspaces as a social design method generates a link between wellbeing and social design methods that can be exploited. The case studies in this paper cover a

range of participants facing different problems in various contexts but with the common thread of reporting changes to individual wellbeing through engaging with makerspaces.

To make the case for well-maker spaces we propose further pilot trials that engage directly with the public health agenda and apply, test, and develop the evidence base for making-well. The authors are extending these findings. One, for instance, is applying them to the co-design of a care home garden and makerspace for adults with learning disabilities and with care workers during COVID-19 pandemic funded by care providers. Accessibility, quality ‘well-made’ outcomes, immediacy of outcomes and the ability to exhibit these, contribution to unresolved causes and the design of the environment all feature in early findings (see https://community21.org/casestudies/14815_re_making_well). The other is planning the inclusion of well-maker spaces in two sites as part of a research project on place and social design, seeking to enhance the responsive and responsible practices of the social designer by working with specific characteristics of place. Well-making in both cases is conceived as an explicit focus on co-producing outcomes to support wellbeing through making in community organisations as we all recover from the COVID-19 pandemic and other global challenges. Just as we need to consider the environmental impact of everything we do, we must also be mindful of the health impacts of spaces and places we design.

We are not alone in identifying the wellbeing outcomes emerging in makerspaces. Carucci and Toyama (2019) document care home residents identifying their makerspace as a place most likely to support their wellbeing. Nick Taylor et al. (2016) state that users of makerspaces report reductions in loneliness and reliance on health services along with experiences of being happier and healthier, more active with reductions in alcohol use and medication. They also report users identifying makerspaces as having less perceived stigma attached to them than traditional wellbeing provisions. This raises the question of whether making the wellbeing benefits of makerspaces more explicit could actually diminish their inherent benefit as more implicit, embodied outcomes? Might makerspaces become stigmatised if formalised as part of the healthcare agenda and arts on prescription policies?

Wellbeing in these spaces may also be defined by new opportunities to engage with the development of diverse communities, local politics, and more sustainable products. What we frame as The Well-Maker-Space the goal of wellbeing, however nuanced, *is* more explicit and is prioritised as a common purpose within the aims and ambitions of projects. Further research will

feed into the broader scope of operationalizing makerspaces and including them as a basis for research within social design (Davies et al 2016). There are calls for further research on maker cultures to better underpin claims about making and wellbeing (Wilson and Cordier 2013). By deploying makerspaces within social design projects we can both utilise making as a tool for social and environmental change, and critically address a widespread need to support and enhance wellbeing, especially in a world full of challenges to our wellbeing and mental health as we move beyond the Covid-19 pandemic to face crises of climate breakdown, economic breakdown and conflict. Like the Maker Movement more broadly, the definition of wellbeing may be further diversified and democratised through making culture itself to expand on notions of an integrated community and individual understanding of wellbeing through creativity.

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