

MAKING SPACES



SPRINGBOARD

#1 INTRODUCTION

Reimagining makerspaces to support equity and social justice: Introduction to the SpringBoard series.

SETTING THE CONTEXT

Makerspaces are informal multipurpose sites designed for collaborative hands-on learning and creative production. These sites offer participants the opportunity to share materials, skills, interests and ideas in order to address a range of technological, personal and political goals. Makerspaces are a relatively new phenomena and the sector has rapidly expanded in recent years.

Little research has been conducted with makerspaces to date and one of the aims of the Making Spaces project is to address the current gap in knowledge regarding the roles, practices and possibilities of these contemporary spaces.

Makerspaces occupy an interesting position with regard to the ongoing and entrenched exclusion of many communities from Science, Technology, Engineering and Mathematics (STEM), holding the potential to either reinforce or challenge these injustices. In particular, our project is interested in the practice of making (as a fundamental human activity) and its potential for transformative justice for marginalised communities. Whilst focusing on makerspace settings, we also want to consider the ways in which makerspaces might develop further to support equitable and sustainable living through making – not just in, but also beyond, their institutional spaces.

Despite the maker movement's early commitment to values of democracy and accessibility, in practice makerspace participants in the global North still predominantly reflect a traditional STEM demographic that is White, cis-male, middle-class and able-bodied [1]. As a result, these spaces tend to champion knowledge, values and ideas that reflect the histories and interests of privileged communities. Barriers to access and retention are found in these spaces just as they are in the wider science, engineering and technology sectors.

Yet, makerspaces have the potential to build communities, to support both individual and collective agency, and to shape sustainable and equitable futures. Equally, they can help tackle the under-representation of marginalised groups in engineering, science and technology. They have the capacity to embrace and champion the expertise and interests of those who have historically been excluded and ignored by STEM and have the potential to re-orientate making – and ultimately the technologies made – towards more equitable ends [2].

Making Spaces is a collaborative research and development project being conducted with young people, practitioners and researchers. The project seeks to identify transformative practice and help support the sector to adopt more equitable and inclusive practice.

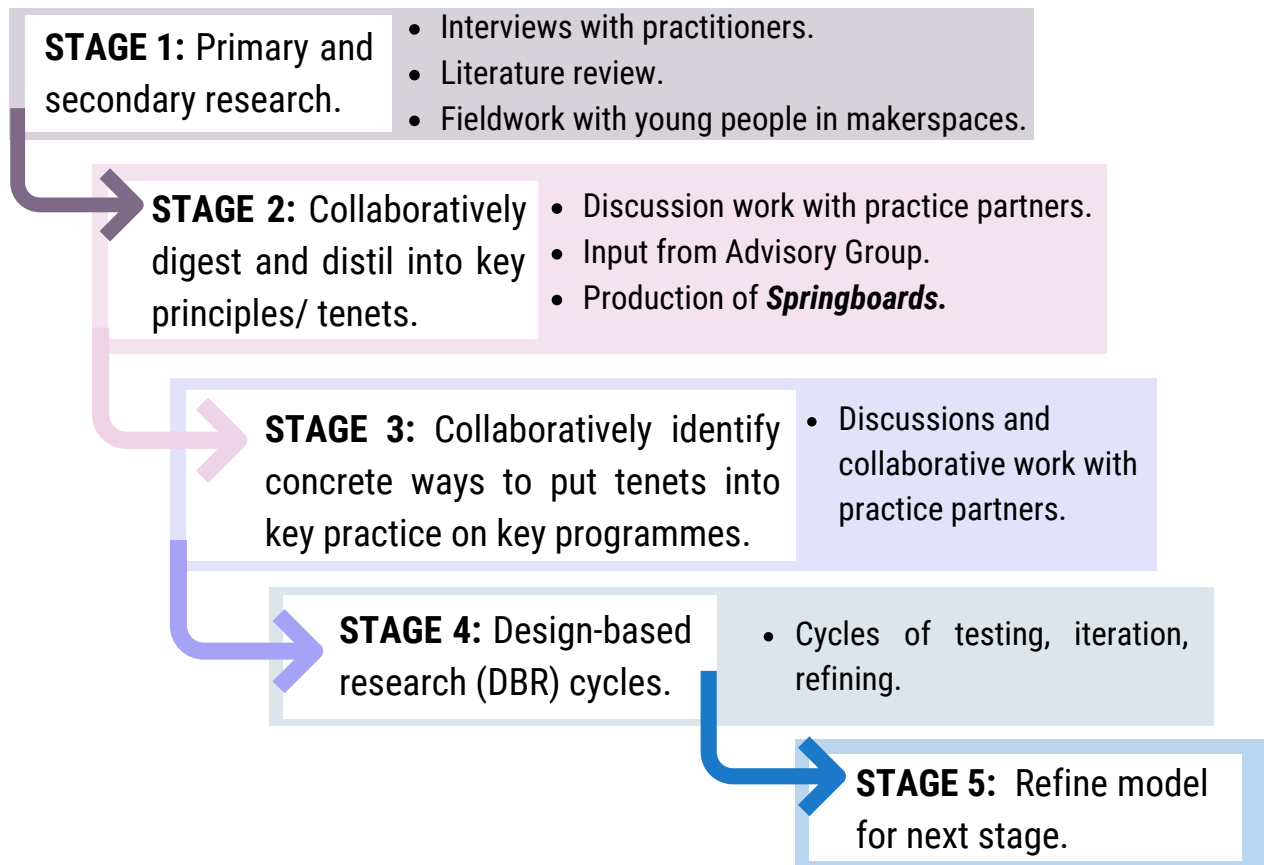
MAKING SPACES SPRINGBOARDS

The *Springboard* series of publications summarises evidence and ideas from research conducted for the Making Spaces project and the wider literature. The term *Springboards* is used as these are designed to be useful 'jumping off points' for re/imagining practice.

The aim of the *Springboards* is to support practitioners in the process of professional reflection and to help makerspaces in building their capacity for more equitable and socially just practice. The publications are primarily targeted to makerspace practitioners and policy-makers, although they may have relevance for the wider STEM education sector. Each *Springboard* identifies two key tenets (principles, or ideas) for supporting professional reflection and action.

The *Springboards* form part of the Making Spaces research process. As illustrated below (Figure 1), the summaries articulate principles and ideas identified through our research. We plan to further develop these ideas through collaboration with our partner organisations and to then realise these principles in practice within makerspaces.

Figure 1: The Making Spaces research process



There are three further publications in this series – which are summarised below.

SUMMARY OF SPRINGBOARD #2:



Re/imagining the values and purpose of makerspaces.

Springboard #2 summarises key evidence and ideas to help support makerspaces in reflecting on and rethinking their purpose and values in more socially just ways. 'Values' here refers to both the importance, worth or usefulness of a makerspace (e.g. why it exists) and its principles, standards and judgements (e.g. what drives its activities).

Springboard #2's key tenets for practitioners to take forward:

1.

Re/ frame your organisation's key purposes as being to support communities, facilitate social action, promote social environmental sustainability and serve the collective good.

2.

Embed a culture of shared values that centres around the notion of care and sustainable wellbeing.

Re/imagining the values that underpin the creating and making process can enable makerspaces to embrace and nurture a wider spectrum of approaches, prioritising approaches that support individuals and communities to take action towards socially just and environmentally sustainable futures. Practitioners can help to embed a culture of care and sustainable well-being by recognising the importance of five key areas: building trusting relationships, healing, respecting community knowledges, reparation, and transformative accountability. Examples are provided from youth work conducted in makerspaces in both the UK and the USA.

SUMMARY OF SPRINGBOARD #3:



Re/imagining the values and purpose of makerspaces.

Springboard #3 aims to support and empower makerspaces in rethinking space within their settings, in particular to think expansively about the idea of space – so as to include material, social and emotional dimensions, as well as physical ones. It summarises key ideas and evidence to help practitioners to reimagine spaces in more equitable ways.

Springboard #3's key tenets for practitioners to explore:

1.

Recognise that makerspaces are not just physical spaces, nor are they neutral spaces. These spaces are complex and are part of wider power structures and relations.

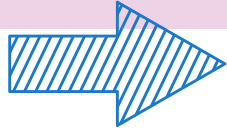
2.

Engage in critical reflection and action to ensure that spaces are safe and socially just by appropriately resourcing and supporting participatory approaches.

The *Springboard* outlines approaches that makerspaces can adopt to support equitable practice by questioning 'traditional' educational frameworks, elitist views held about STEM, and social stereotypes.

Re/imagining makerspaces involves moving beyond 'traditional' ideas of learning and teaching to address the relationships, expectations and representations that make up a space. Makerspaces can not only protect participants physically, but can also be attuned to how (conscious and unconscious) injustices and practices can have an impact on wellbeing, with the awareness that what may feel safe to some will not for others. Examples are provided of makerspaces creating safe, caring spaces (working within and beyond their own physical settings) to support young people in meaningful making for both their own benefit and that of their communities.

SUMMARY OF SPRINGBOARD #4:



Relimagining objects in makespaces:
What gets made and how?

Springboard #4 aims to support and empower practitioners in rethinking how objects are made within makespaces by questioning and challenging the dominant cultural and technological perspectives that typically govern how making happens and who benefits from what is made. Drawing from the stories of makerspace practitioners and others, productive approaches are identified that can help support the agency and empowerment of young people – particularly those from minoritised communities – through making.

Springboard #4's key tenets to guide practitioners:

1.

Critically rethink the values that underpin making. Often, the making that happens in makespaces is driven by the interests, methods and conceptual approaches of the privileged, which exclude and marginalise other communities' interests and approaches.

2.

Value and support equitable and inclusive approaches to making.

Makerspaces can support social justice by valuing the knowledge, methodologies and types of making that are practised by minoritised and under-resourced communities.

Attention is drawn to how makespaces can support approaches to making that are grounded in the lives and interests of local communities (rather than reflecting the values and interests of privileged social groups). Examples are provided of how community-based approaches to making can support social action, for instance through the innovative repurposing and re-appropriation of different technologies.

ABOUT OUR PROJECT

The Making Spaces project is a collaborative research and development project, funded by the Lloyd's Register Foundation. It brings together researchers from UCL Institute of Education and makerspace practitioner partners from Knowle West Media Centre, MadLab and the Institute of making.

The project has been conducted with young people engaged in direct and sustainable action in makerspaces, and draws on theoretical frameworks of resistance including: **Decolonial Theory, Critical Race Theory, Critical Whiteness Studies, Black Feminism, and Science and Technology Studies.**

We are supported by a fantastic advisory group: Shirin Vossoughi, Kim Foale, Nettrice Gaskins, Ana María Ramírez, Edna Tan, Ayşe Inan, Kat Braybrooke, Heather King, Anna Bird and Tim Slingsby.

Please feel free to contact the team below and follow the links to our website and social media for more information. Project research team: Louise Archer (director), Kylo Thomas (lead researcher), Jen DeWitt (researcher/ survey lead) and Esme Freedman (project admin and comms officer).

Contact us!



WEBSITE: <https://m4kingspaces.org/>

TWITTER: [@m4kingspaces](https://twitter.com/m4kingspaces)

INSTAGRAM: [@m4kingspaces](https://www.instagram.com/m4kingspaces)

EMAIL: esme.freedman.16@ucl.ac.uk



REFERENCES

1. Davies, S. R. (2017). Hackerspaces: making the maker movement. John Wiley & Sons. p.93
2. Vossoughi, S., Hooper, P. K., & Escudé, M. (2016). Making through the lens of culture and power: Toward transformative visions for educational equity. *Harvard Educational Review*, 86(2), 206-232. Barajas-López, F., & Bang, M. (2018). Indigenous making and sharing: Claywork in an indigenous STEAM program. *Equity & Excellence in Education*, 51(1), 7-20.