

Impact case study (REF3)

Institution: University of Huddersfield		
Unit of Assessment: 33 Music		
Title of case study: Changing the Faces of Technology: Supporting the Inclusion of Women and Girls in Music Technology through Innovative Approaches to Creativity and Learning		
Period when the underpinning research was undertaken: 2012– 2020		
Details of staff conducting the underpinning research from the submitting unit:		
Name: Dr Elizabeth Dobson	Role: Principal Enterprise Fellow in Music Technology	Period employed by submitting HEI: 2007–present
Period when the claimed impact occurred: 2015 – December 2020		
Is this case study continued from a case study submitted in 2014? No		
<p>1. Summary of the impact</p> <p>Music technology is a field in which women remain significantly underrepresented: recent studies show that women comprise only 7% of the audio industry workforce, and 10% of UK music technology degree applicants. Dr Elizabeth Dobson’s research, which explores means of enhancing collaborative learning and creativity within music technology, has generated a range of initiatives that directly address this underrepresentation. In 2015 Dobson initiated the Yorkshire Sound Women Network (YSWN) to support women as a minority in music technology. Through YSWN and related engagement activities, Dobson’s research has underpinned new international advocacy work that is demonstrably changing attitudes and behaviours of leading industry bodies, including the Audio Engineering Society (the leading professional body with more than 12,000 members worldwide) and Sound and Music (the UK’s national charity for new music). It has also been a catalyst for spin-off grassroots enterprise initiatives in the UK, North America and Europe; afforded significant new employment opportunities to professional women musicians; and contributed to the development of music technology skills, industry knowledge and new career aspirations of girls and women across the north of England.</p>		
<p>2. Underpinning research</p> <p>Since arriving at the University of Huddersfield, Dobson has conducted research investigating the interrelation of collaborative process, learning, and creativity, with particular focus upon music technology environments. Her research initially examined the collaborative learning of undergraduate music technology students, a field neglected in the music education literature. To explore the conditions needed to optimise such learning, in 2012 Dobson created CollabHub, an experimental environment intended to foster student-led extracurricular collaborative projects. Attracting a student community of digital artists, writers, film makers, graphic designers and musicians, who were invited to ‘pitch’ and develop ideas requiring multiple disciplinary skills, CollabHub acted as a testing ground for principles derived from existing theories of group creativity and social psychology, and as a means of building new knowledge about collaborative experience through participant observation and interviews (reported in 2015 [3.1]). The insights arising from CollabHub formed a springboard for further ethnographic research by Dobson (2016-2020) on student learners in diverse music technology contexts [3.2; 3.4].</p> <p>Across this research, Dobson demonstrates that collaborative creativity in music technology is a ‘complex interactional accomplishment’, depending on ‘cumulative conversation’, ‘silent witnessing’ and private reflection [3.2, 3.4]. Talk, in particular, plays a crucial role in fostering cognitive development and building social capital [3.4]. The collective devising of new tools also plays an essential part in the learning of creative groups, in addition to the utilising of existing tools [3.2]. For example, diagrams may serve as a vital meaning-making tool for exploring past work undertaken individually, becoming a basis for the co-development of new collaborative possibilities. Building on such insights, Dobson proposed a new framework, outlined initially in 2015 [3.1] and then developed in 2019 as a set of ‘Practice Principles’ aimed at arts leaders and community groups [3.6], intended to support group environments conducive to participation and creative enterprise. Key elements of this framework are: providing <u>confidence</u> to take risks safely; creating appropriate <u>platforms</u> for individuals to present and share; the creation of a <u>community</u> of peers that overcomes isolation and builds resource; <u>collaboration</u> as a basis for confident learning and innovation; and promoting learner <u>agency</u> [3.1; 3.6].</p> <p>From 2015, Dobson’s research has investigated how these insights might provide a basis for increasing the participation of women and girls in music technology. Through fieldwork undertaken</p>		

with pioneering feminist sound and music collectives in North America and Germany [3.3; 3.5], she has begun the important task of mapping the field in this area, investigating the obstacles encountered by women working in audio and sound, and theorising their approach to collaborative practice, viewed from the context of Dobson's own framework for collaboration and learning. In [3.3] Dobson positions these groups' approach to collaboration in relation to feminist values. Her term 'Digital Audio Ecofeminism' encapsulates the values prioritised by feminist sound and music collectives set up to support people of marginalised genders, which include a commitment to the rejection of neoliberal capitalism, the avoidance of hierarchies and relations of dominance, supporting collective co-creation, and assigning new importance to alternative models of influence that recognise how all members have the capacity to influence change both locally and globally. This theoretical work has served as a basis for Dobson's research-led practice as initiator and then Chair and Co-Director of the Yorkshire Sound Women Network (YSWN; founded 2015), through which many of the impacts of her research have been routed (see Section 4).

3. References to the research

Evidence of the quality of the research: Outputs [3.1] to [3.5] were each subject to rigorous peer-review prior to publication. [3.6] is a public-facing report based on findings of [3.1], [3.2] and [3.4].

[3.1] Dobson, E. (2015), 'Permission to Play: Fostering Enterprise Creativities in Music Technology through Extracurricular Interdisciplinary Collaboration', in P. Burnard and E. Haddon (eds), *Activating Diverse Musical Creativities* (Bloomsbury), 75-96. [can be supplied on request]

[3.2] Dobson, E. and K. Littleton (2016), 'Digital technologies and the mediation of undergraduate students' collaborative music compositional practices', *Learning, Media and Technology*, 41/2, 330-50. <https://doi.org/10.1080/17439884.2015.1047850>

[3.3] Dobson, E. (2018), 'Digital Audio Ecofeminism: The Glocal Impact of All-female Communities on Learning and Sound Creativities', in L. De Bruin, P. Burnard and S. Davis (eds), *Creativities in Arts Education, Research and Practice* (Brill), 201-20. <https://doi.org/10.1163/9789004369603> [can be supplied on request]

[3.4] Dobson, E. (2020), 'Talk for collaborative learning in collaborative computer-based music production', *Journal of Music, Technology and Education*, 12/2. https://doi.org/10.1386/jmte_00003_1

[3.5] Dobson, E. (2020), 'Conversations in Berlin: Discourse on Gender, Equilibrium, and Empowerment in Audio Production', in R. Hepworth-Sayer et al (eds), *Gender in Music Production* (Routledge), 268-84. <https://doi.org/10.4324/9780429464515-20> [can be supplied on request]

[3.6] Dobson, E. (2019), 'Permission to Play: Practice Principles for Collaborative Learning in Music Technology', *Yorkshire Sound Women Network report*.

4. Details of the impact

Recent studies show that women comprise only 7% of the audio industry workforce and 10% of UK music technology degree applicants. Aware of these severe imbalances, in 2015 Dobson issued an open call for women to attend the first meeting of the Yorkshire Sound Women Network (YSWN), with the aim of building a programme of activities to strengthen opportunities for women in music technology. YSWN has since coordinated 180 meetings involving 870 women and girls from across the north of England in skills workshops, performance nights, mentoring sessions involving invited guests, advocacy work and socials. It has also led two ambitious educational programmes: *Go Compose* (2018/19), a programme of 20 days of music technology workshops at University of Huddersfield for young women aged 11–22 (55 participants); and *WIRED* (2019/20), which encompassed 20 outreach workshops for schools and youth groups across Yorkshire, and two 12-week music tech clubs for 11–18 year olds in Leeds and Doncaster (277 participants). Dobson delivered and coordinated YSWN events up to 2018, when she became Chair and Co-Director of the group. Across its work, YSWN aims to create 'informal, member-led groups' that 'encourage confidence with music technology in a nurturing environment', directly reflecting the approach to learning and creativity developed in Dobson's research. YSWN has cemented an international reputation as a leader in the field, directly inspiring the creation of nine other groups in the UK, USA, Norway and Malta [5.1], all with shared goals and core values informed by Dobson's approach to challenging gender inequality, building skills and promoting creativity. Through the extensive activities of these groups and related training and advocacy initiatives, Dobson's research has had a range of significant impacts on beneficiaries including music industry professionals and organisations, women musicians employed as group coordinators and project instructors, members of affiliated and spin-off groups, and YSWN event participants.

Changing attitudes and behaviours in the music industry

Dobson's research has formed the basis for new advocacy initiatives intended to encourage industry bodies to act in support of gender equity. In 2018 Dobson led the development of the #audioequitypledge, with input from gender campaigners SoundGirls and HeForShe. Offered as 'a guide to supporting women in sound', the Pledge is a five-page document of principles based on Dobson's research findings on inclusive environments for learning [3.1; 3.6], stressing the importance of confidence, collaborative process and supportive community. Disseminated through social media and partner websites, the Pledge influenced change across multiple industry sectors, spanning large and small organisations: for instance, the Edinburgh Festival of Sound (Scotland's sound and technology festival) created a permanent webpage stating its commitment to each element of the Pledge; the Governor-at-Large and Chair of the Diversity and Inclusion Committee of the Audio Engineering Society (the leading professional body for the audio industry) posted that *'encouraging the presence of women at trade conferences is my #audioequitypledge'*; the events promoter at the Dinosaur Buffalo Live Music venue in Buffalo, NY, posted *'I'm taking the #audioequitypledge by continuing to invite women to stand at the board ... so that we can listen and learn together'*; and the Head of Performing Arts at the Robert Smyth Academy in Market Harborough brought the Pledge to the secondary classroom by committing to *'ensure more female-produced songs are played at start of every tech lesson'* and to *'be more explicit with praise for female students work at KS3'* [5.2, p.6-9]. The Chief Executive of the UK youth music organisation Noise Solution reports striking organisational change as a result of its commitment to the Pledge: *'we've now got three women practitioner/musicians delivering with Noise Solution as tech representatives - role modelling. Two of those are feeding back their representation on what works when working with young women. We've secured a £200k grant to work in partnership with Suffolk Carers to specifically work with over 150 young women ... who have caring responsibilities. These sessions will be exclusively female led and delivered. ... We're adapting our bespoke digital platform to create digital communities for [these young women] alongside their physical communities where we can capture their experiences and reflections of the sessions'* [5.2, p.5].

Further impact on industry behaviours has been achieved by advocacy and consultancy activities undertaken by Dobson, spanning global and local organisations. In 2018 Dobson was invited to join Spotify's EQL Partner Board, a small cohort of industry professionals asked by Spotify to *'come together to create solutions'* aimed at *'increasing equity for women'* in music (Spotify's Director of Social Impact, [5.4, p.2]). At monthly meetings Dobson and other YSWN staff contributed to Board discussions of Spotify's gender equity programmes, and YSWN workshop plans were also provided to the 280 applicants to Spotify's EQL Residency programme. Locally, in 2019 YSWN set up three paid traineeships for women with Yorkshire partners Greenmount Studios, BASSment Studios and Vibrations Studios. These opportunities had clear benefits for the trainees, one of whom reflected on how *'I have been able to expand my network in the industry with all the people that I have met through the placement ... also, I can now tell future employers that I've already had experience putting on events, sound engineering, running a venue, promotion for myself and events'* [5.2, p.11]; but they also brought new insights for the industry partners, such as how it *'was clearly incredibly beneficial for many of our female artists to be able to work with a female staff member'* (Owner of Greenmount Studios, [5.2, p.13]). In 2020 YSWN delivered two online training workshops for audio professionals on 'Supporting Gender Diversity and Inclusion'. Participants in the first workshop for freelancers commented: *'I feel rejuvenated in my passion for equality and inclusion in the music industry, especially within the tech world'* and committed to *'bring the conversations we have had about various biases to my organisation, regarding our open calls and subsequent hiring process'* [5.2, p.15]. A second session was delivered to 15 Berlin-based staff members of leading music production company Ableton, including software engineers, designers, HR and marketing staff; participants found the workshop *'informative and enlightening'*, were *'inspired by hearing about the work some of our colleagues put into hiring efforts and [wanting] to really do the same with my team'*, and were *'very happy we focused on defining some actionable steps rather than just learning about the theory'* [5.2, p.17-22].

Key industry figures have recognised the difference made by the initiatives inspired by Dobson's research. The Head of Education at the UK's national organisation for new music Sound and Music writes: *'[Dobson's] work helped us create our own case for gender equality ... which has become a*

feature of our programmes of work'; and the Governor-at-Large and Chair of the Diversity and Inclusion Committee of the Audio Engineering Society has praised Dobson's *'solid, actionable approach to offer solutions which will strengthen our society and the audio economy'* [5.3, p.3]. The Chief Executive of Noise Solution writes of how the changes made in response to the Audio Equity Pledge *'mean better outcomes for us as an organisation and for our participants'* [5.3, p.1].

Sector development and creation of employment opportunities

Dobson's research has contributed to building opportunities for women in music technology in the UK and internationally. YSWN directly inspired the creation of six new groups in the UK – SONA (Sheffield), Calderdale Sound Women Network, YSWN Huddersfield Makers, YSWN York, Leeds Sound Women, and Manchester Sound Women Network – plus groups in USA (Women in Music Tech, Georgia), Norway (Women Nordic Music Technology, WoNoMute) and Malta (Malta Sound Women Network). Each group organises its own activities, guided by YSWN's values and ethos. The co-founder of the Georgia and Norway groups remarks: *'Liz Dobson and her work with YSWN have been critical to change my attitude towards the underrepresentation of women in music technology and become an agent of change'* [5.3, p.5]. The international influence of Dobson's research is especially significant in cultural contexts where gender imbalance is more severe than in the UK. The Malta group has been credited by the *Malta Sunday Times* for *'creating something that encourages women to stand up in a male-dominated world and have the confidence to say shhh for a moment; just listen'* [5.4, p.4]. The founder of the Malta group believes that it has contributed to a *'drastic improvement'* to the music scene in Malta, with *'many more female DJs, musicians, artists and technicians ... regularly in festival and concert line ups'* [5.3, p.6]. Malta Sound Women Network formally registered as an NGO in 2019.

YSWN's work has directly created valuable employment opportunities for female freelance professionals, worth £87,892 in fees since 2017. This includes a pool of 25 freelance Associates who have delivered workshops and represented YSWN at industry events. These opportunities bring not just financial benefit, but the development of new professional and leadership skills informed by the pedagogical framework outlined in Dobson's research. A YSWN Associate writes of how the invitation to lead a workshop for YSWN in 2019 *'was a real turning point in my career. The fact that I was asked to lead a session and offered a professional fee gave me the confidence to believe in my skills and expect industry-standard rates of pay. Being treated fairly in a professional context for my first workshop was a great help to me when negotiating future freelance contracts'* [5.3, p.7]. This Associate has since joined with another YSWN Associate to create Equalize Music Production, a thriving social enterprise delivering courses and workshops aimed at increasing diversity in music production. Women involved in running YSWN and its spin-off regional groups have developed new skills in governance and organisational development. For instance, in 2018/19 Dobson worked with her YSWN co-directors to develop a Business Plan for YSWN to register as a Community Interest Company, and to secure a £20,000 start-up mentoring package offering skills training from a range of leading small business advisers.

YSWN has expanded sector capacity through its success in obtaining substantial external funding, totalling £142,837 from a range of funders [5.5]. Three of the UK spin-off groups have directly benefitted from Arts Council England funds (£19,870) sourced centrally by YSWN, enabling them to deliver more ambitious projects. YSWN project participants have also benefitted from in-kind support (equipment; spaces) worth an estimated £10,000, made available to YSWN by institutions such as National Science and Media Museum, Doncaster College and Leeds Beckett University.

Developing confidence, skills and aspirations for girls and women in music technology

Dobson's research on environments conducive to collaborative learning stresses the importance of confidence, achieved through the management of risk and the creation of a community of peers. YSWN activities, informed by Dobson's methods, have demonstrably built confidence amongst the hundreds of women and girls that have taken part. Participant feedback shows that the creation of a relatable community that reduces perceptions of risk is key to this empowerment. Participants at a YSWN 'Level Up in Sound Engineering' event in Leeds (2019) remarked that *'just seeing so many females interested in music technology is something that I had never experienced before'* and reported that they had *'never experienced a sense of community like this one'* [5.6, p.1, p.3]. A

participant in one of the *WIRED* workshops (2019) noted how the course leaders *'made me feel that I could be at ease because I didn't have to do things when I didn't feel confident doing them. I could slowly build my confidence'* [5.6, p.14]. A 2019 survey of 21 members of YSWN and affiliated UK and overseas groups found that 88% had become more comfortable sharing work and ideas, 85% were more comfortable about taking risks, and 86% felt that belonging to a community had improved self-confidence about knowledge and skills in music technology [5.7, p.10]. This increased confidence has supported participants in YSWN activities to develop a huge range of professional music technology skills, encompassing soldering, live coding, audio electronics, sound synthesis, sound recording, using Digital Audio Workstations for music production, building sound installations, DJing, and sound design. A participant in the *WIRED* music tech youth clubs said they enjoyed *'learning to use the equipment and having a go experimenting with it'* [5.6, p.8]; and *Go Compose's* young participants commented on the value of *'being able to use industry standard equipment along with being taught how to use it proficiently'*, and how *'all of the course taught me new skills and widened my knowledge of sound composing'* [5.6, p.16]. Respondents to the survey of adult group members singled out new practical skills they had learned, including soldering contact microphones, recording sound, and using audio production software [5.7, p.12].

These experiences are changing women's and girls' aspirations for the future. Participants at the Leeds 'Level Up in Sound Engineering' event (2019) commented on how they are *'taking away ... new ideas, contacts and a better understanding on how to start a sound engineering career from scratch'*, and how they *'learned very useful tips and advice about breaking into the industry and having confidence within myself'* [5.6, p.2, p.1]. Respondents to the survey of adult group members highlighted their new understanding of work opportunities and *'how to develop my career in this area'* as central benefits of their involvement [5.7, p.14]. Changed aspirations are especially significant for girls and young women involved in YSWN activities. Participation in the regular *WIRED* clubs forged an enthusiasm for further learning and music-making: attendees expressed their intention to *'continue with using Audacity and find more samples to work with and create a song from scratch'*; *'test out tracks on my own at home'*; and *'learn more about tech in music'* [5.6, p.14, p.9]. A talk by Dobson at Middlesbrough College inspired the creation of a new peer support group for women and non-binary people interested in music technology [5.4, p.6]. New career aspirations were also seeded: *Go Compose* attendees remarked on how *'I would love to become a sound engineer'* and *'it's made me think about getting into DJing more seriously'* [5.6, p.17]. A short film made about a YSWN soldering workshop for year 7 girls (2016) captures the excited responses that such unusual opportunities create: *'it's really fun doing this, so if you were doing it for a career then it would be even more fun'*; *'before this activity, if I was sitting at a computer ... I would never think about what's inside the computer or how it works ... and now I've done it I think I will'*; and even that the experience *'feels like you're doing something that could change the world!'* [5.9].

5. Sources to corroborate the impact

[5.1] Details of spin-off groups affiliated with or inspired by YSWN

[5.2] Documentation of Industry advocacy activities: Compiled *Audio Equity Pledge* responses; Trainee feedback, Bassment Studios (2020); Host feedback, Greenmount Studios (2020); Participant feedback, *Gender Diversity & Inclusion* training collected by YSWN and University of Huddersfield (2020)

[5.3] Testimonial letters: Chief Executive, Noise Solution; Head of Education, Sound and Music; Governor, Audio Engineering Society; Co-founder, WoNoMute; Co-founder, Malta Sound Women Network; Associate, YSWN

[5.4] Press coverage: *YSWN is a Founding Partner as Spotify and SoundGirls launch EQL Directory*, YSWN website (2018); *Finding the Music in Noise*, Pink Magazine, Sunday Times of Malta (2019); *It's Time to Hear about Gender Progress*, Middlesbrough College website (2018)

[5.5] List of YSWN grants (2017-2020)

[5.6] Compiled feedback from YSWN community outreach and education activities, collected by YSWN and University of Huddersfield: *Level Up in Sound Engineering* (2019); *WIRED* (2019-20); *Go Compose* (2019)

[5.7] YSWN Impact Survey (2019): *All-Women Sound Collectives - Are We Making a Difference?*

[5.8] Yorkshire Sound Women Network Annual Reviews 2018-19 and 2019-20

[5.9] YSWN Video: *Soldering a Noise Instrument / Sound Composition workshop*