Institution: University of Hull

Unit of Assessment: 33 Music, Drama, Dance, Performing Arts, Film and Screen Studies

Title of case study: *Connect: Resound* - how digital technology can enhance access to expertise and widen participation in music education

Period when the underpinning research was undertaken: 2008 to 2018

Details of staff conducting the underpinning research from the submitting unit:

Name(s):	Role(s) (e.g. job title):	Period(s) employed by submitting HEI:
Dr Andrew King	Reader	1999 to present
Dr Helen Prior	Lecturer	2013 to present
Dr Rob Mackay	Reader	2001 to 2020

Period when the claimed impact occurred: 2015 to 2020

Is this case study continued from a case study submitted in 2014? N

1. Summary of the impact (indicative maximum 100 words)

Drawing on research by Dr Andrew King into technology as an educational tool, *Connect: Resound* has created an innovative pedagogical framework for providing music education over the internet to school pupils. In partnership with the charity NYMAZ (North Yorkshire Music Action Zone), the project has improved access to instrumental lessons for school students in rural communities; enhanced continuing professional development (CPD) for teachers; and created resources to facilitate online performances which have been accessed by thousands of people. The research has led to sustained changes in educational practices for 18 music hubs across the UK. The national lockdown resulting from Covid-19 in 2020 resulted in a huge take-up of the online lessons, demonstrating the efficacy and importance of the framework.

2. Underpinning research (indicative maximum 500 words)

King's work at the University of Hull has, over two decades, been concerned with the intersection between Music, Technology, and Education, and the potential of technology to foster greater inclusion and engagement in the learning experience. Working with internal and external stakeholders, he has developed projects that focus on the real-world potential of technology in music education. A key research finding from his work is that **digital solutions are not 'second best' to face-to-face teaching**; rather there are specific benefits from online approaches in terms of increased engagement by students.

'Collaborative Learning in the Music Studio' (2008) focused on using technology to support on-demand learning using bespoke online materials [1]. This approach to using web technology to enhance learning has since become a central part of King's approach. 'Contingent Learning for Creative Music Technologists' (2009) highlighted the use of this interface in terms of the pedagogical approach being more specifically linked to experiential learning, and drew upon existing research from the field of educational psychology [2].

King's work has drawn together research across a variety of domains to consolidate a discipline that was previously fragmented. 'Music, Technology, Education: Critical Perspectives' (2016) appeared within the SEMPRE (Society for Education, Music and Psychology Research) studies in The Psychology of Music [3]. King was invited to be lead editor of *The Routledge Companion to Music, Technology and Education* (2017) which drew together perspectives from musicologists, educators, composers, performers and pedagogues [4]. The book's interdisciplinary approach demonstrated that a technologically-oriented view of music education had a broad variety of different practical applications,

including on professional development as well as practice. This publication demonstrated King's concern with the real-world application of a range of new technologies for educators working in a range of contexts. A number of international expert panel invitations followed to specifically disseminate the outcomes of the *Connect: Resound* project. These included an invitation to the University of Cologne and the Grimme-Institut (2018), The University of the Arts (Berlin, 2019), and a keynote at the 'Teaching Music Online in Higher Education' International Conference attended by over 600 delegates at the Conservatorium of Music (Melbourne University, Australia, 2020).

King began the *Connect: Resound* project in 2014, prompted by Darren Henley's 2011 review of Music Education in England. That report identified the need to consider how technology might enhance music education in rural areas. King brought a team of researchers to Hull to address this question: Dr Helen Prior (CI), Dr Mark Minott (RA), and Dr Caroline Waddington-Jones (RA) came to work alongside Dr Robert Mackay (CI) and Dr Daniela Fountain (RA). This team combined music specialisms in Psychology, Education, Technology and Business. The project was supported by a **£112K** grant from the **NESTA Digital Research and Design** fund [7]. The research focussed on two questions:

How can existing video-streaming technology be repurposed to deliver music education for learners in rural locations, supported by appropriate infrastructures?
Infrastructure to support video-streaming via superfast broadband had only just been rolled out in rural areas before the project. The project built on this infrastructure by enabling instrumental teachers to conduct lessons over the internet , using affordable camera and mixer technology to ensure a good quality communication between student and teacher [5]. A set of support mechanisms (CPD) and a **£60K Arts Council**-funded remote music network [8] were established to ensure ease of set-up for non-specialists.

What are the implications for understanding the relationships between students and teachers?
Connect: Resound broke new ground by focussing on the teaching behaviours within online education and comparing these to face-to-face, drawing upon existing frameworks via first a regional and then a national pilot. A significant finding was that **there was little difference between the two modes of delivery** [6]. More dialogue between student and teacher took place in online teaching, while students demonstrated a greater sense of independence because they would have to solve problems themselves rather than relying on the teacher. The project was rolled out nationally via a **£273K** grant from the **Paul Hamlyn Foundation** [9].

3. References to the research (indicative maximum of six references)

Outputs

1. **King**, A. (2008) "Collaborative Learning in the Music Studio". *Music Education Research*, 10:3, 423-438, https://doi.org/10.1080/14613800802280167
2. **King**, A (2009) "Contingent Learning for Creative Music Technologists". *Technology, Pedagogy, Education,* 18:2, 137-153, https://doi.org/10.1080/14759390902992550
3. **King**, A. & Himonides, E. (2016) *Music, Technology, and Education; Critical Perspectives,* SEMPRE studies in The Psychology of Music.
4. **King**, A., Himonides, E. and Ruthman, S. (2017) *The Routledge Companion to Music, Technology, and Education*.
5. **King** A., **Prior**, H. and Waddington-Jones, C. (2020): "Connect Resound: Using online technology to deliver music education to remote communities". *Journal Of Music, Technology & Education*, 12:2, 201-217, https://doi.org/10.1386/jmte_00006_1
6. **King**, A., **Prior**, H, and Waddington-Jones, C. (2019) "Exploring teachers' and pupils' behaviour in online and face-to-face instrumental lessons", *Music Education Research*, 21:2, 197-209, DOI: https://doi.org/10.1080/14613808.2019.1585791

Grants

7. £112K NESTA Digital Research and Design Fund grant to Dr Andrew King and NYMAZ for *How Can Technology Improve Access to Music Education in Rural Areas*, 2014-2016
8. £60K Arts Council England grant for *The Remote Music Network*, 2016-2017
9. £273K Paul Hamlyn Foundation grant to NYMAZ (for which the University of Hull provided the data and report for the business case), 2017-2019

4. Details of the impact (indicative maximum 750 words)

Henley's 2011 review of Music Education in England asserted the life-long benefits that music education can have for young people, whilst noting the enormous inconsistencies that exist in provision across the country. Recommendation 33 of this review indicated further work was required on the use of technology in music education. King, working with NYMAZ and the not-for-profit organisation UCanPlay developed *Connect: Resound* to create a technological solution and support infrastructure that addressed the issue of access to instrumental tuition in rural areas, thus **improving educational inclusion for rural communities**. It has also helped the charity NYMAZ to develop resources and platforms to enable a broader use of online resources in music education across the country, thereby resulting in broader **changes in educational practice for 18 music hubs across the country**.

Phase 1: Creating a solution and supporting infrastructure

The pilot project focussed on North Yorkshire, selected because of its ONS description as 85% 'very rural', with a low popular density of 76 people per square mile (England average 430). This work also made plain the practical problems that schools and music hubs in rural areas face in terms of delivering music education. The second stage, a national roll-out, included four regional hubs with similar challenges, (Durham/Darlington, Cornwall, East Riding, Cumbria), where teachers travelled for approximately **476** hours per week, totalling **18645 hours per year** [A]. *Connect: Resound* aimed to create an easy-to-use technological framework capable of overcoming these practical problems that was reliable. Project partner Ian Bangay, Head of Music Service at North Yorkshire County Council stated: *"…there are real challenges about sending staff out to the small rural schools which could be hours away … the cost implications are huge. [This is] a model that's more sustainable, given the financial pressures that music hubs are under*" [B (1 minute 20 seconds in)].

In the pilot stages, **71 pupils participated**, and **196 hours of tuition** were delivered [A]. According to evaluations conducted as part of the project, **79% of parents** whose children were involved said that their children would **not otherwise have had lessons** and **74% of children wanted the lessons to continue** [A]. To support teachers delivering lessons using this technology, the project created a website [C] that including technical guides, resources and tips. These were designed to guide teachers through the use of this technology without the need for in-person training.

While the potential of this solution was clear from the pilot study, it was when the first national lockdown took place due to Covid-19 in March 2020 that the need for a framework like this became clear. According to data provided by the North Yorkshire music hub, between March and July 2020, over **52% of pupils** accessed music lessons using *Connect: Resound*, equating to **1140 lessons per week** [D]**.** Data from 5 of the other 18 participating music hubs across the same period shows that a total of **3153 students received regular music lessons online** across Key Stages 1-5. [E1]. In addition, *Connect: Resound* CPD uptake increased significantly during this time with almost **4000 views of its online webinars** from March 2020 [E2].

The *Connect: Resound* project also resulted in the formation of the NYMAZ Remote Music Education Network for professionals with an interest in online music education, which began with a conference at York St John University in June 2016 [F] and now has a membership of

450 music education professionals (2020) [E1]. *Connect: Resound* has delivered over 30 live webinars and other CPD events since 2014 – in 2020 alone, these reached a total of **4000 music teachers** [E2].

During phase 1 of the project, the technological solution *Connect: Resound* had created proved effective by engaging thousands of students with instrumental tuition. The findings of the continuing evaluation suggested that **young people were accessing instrumental tuition who otherwise would not have been able to** [A]. Teachers involved in using the technology found it easy to use, and all saw the huge potential the project had.

Phase 2: Handing the research over in a national rollout

The strong base the project had created allowed NYMAZ, with the support of King and his team, to secure an additional **£273,000** of funding from the Paul Hamlyn Foundation in 2017 in order to continue the project. One of the projects developed as a result was ***Connect: Resound* New Contexts** [G], which brought the scheme to four new areas of the country (Croydon, East Sussex, Somerset, and Surrey). In this phase, a range of organisations worked with children in Pupil Referral Units, those with mental health difficulties, and those experiencing rural isolation. This extended the reach of *Connect: Resound* beyond schools in rural areas to other groups of people whose access to music tuition was limited for a variety of different reasons. The use of the online platform proved to be an important tool in allowing for engagement with these groups of people. Among the reported outcomes were high levels of engagement, commitment and focus amongst participants [H]. By 2020, *Connect: Resound* was also working with 18 music hubs in England [E1].

The project also created the opportunity for schools to access live streams of performances from festivals such as Musicport Festival, Grassington Festival, and Harrogate International Festival. This led to the launch of ***Connect: Resound* Live,** which extended the live streaming approach to a range of other kinds of collaborations. These included virtual performance events, where different schools could perform together as part of single event. For example, in 2019, Norfolk Music Hub ran an event which was an extension of their Big Sing project. A live event at the Royal Norfolk Show was streamed into schools and allowed pupils to participate in the performance via the two-way video network. During the event, **750 individual devices** tuned in live to the event, while an average of **200 pupils** watched at each school, and the stream received over **2500 views** [I].

The importance of this approach was highlighted during 2020 and the Covid-19 pandemic. NYMAZ used the *Connect: Resound* Live platform as a means of enabling and promoting a range of performances and festivals. These included a virtual performance by the North Yorkshire County Youth Orchestra, streamed live on 9th July 2020 (with **950 views** on YouTube by December 2020); a performance by Graffiti Classics (**1036 views** by December 2020) [J]; and Rural Fest, a performance organised in conjunction with Cumbria Music Hub.

Connect: Resound again worked with the Norfolk Music Hub to support the delivery of their Virtual Big Sing 2020 during the COVID-19 pandemic. That live event attracted **over 3000 viewers** and **4000 views**, with **over 2000 young people engaging via the live chat** [E1]. NYMAZ's *Connect: Resound* Project Director estimates that, in view of the fact that many people tuning in were in their school bubbles, this livestream reached over **44,000 people** [E1].

Much of the work NYMAZ has undertaken on these projects was prompted by working with King and his team on *Connect: Resound*. Indeed, NYMAZ have become leading advocates for the use of internet technologies in music education:

"The in-depth research undertaken by our academic partner, the University of Hull, has been instrumental to the success of the project. The research has given confidence to practitioners, commissioners, funders and policymakers by demonstrating the range of benefits that online music education delivers." (Project Manager, *Connect: Resound*, NYMAZ) [E1].

"Our ability to support the sector, remain engaged with children, young people and practitioners would certainly not have been possible without NYMAZ having developed specialist knowledge and expertise through the continued development of Connect: Resound since 2014 with the University of Hull. It has enabled us to stay connected with our stakeholders, and foster confidence and development of skills that has allowed learning and engagement to continue during extremely testing times." (Director, NYMAZ) [E2].

In phase 2 of the project, NYMAZ extended the work it had initiated in the *Connect: Resound* project, working with 18 music hubs across the country, extending the benefits to new groups of people beyond schools whose access to music tuition was limited for a variety of different reasons. *Connect: Resound* has live streamed **16 performances** which reached over **26,000 devices (**representing **1000s more individual views** since many events were broadcast direct to schools) [E1]. A case study about *Connect: Resound* on the Inspire Music website [K] has been accessed 24,073 times with 28.3% of referrals from outside the UK [K], demonstrating the extensive interest in this innovative approach to music education.

Overall, this work has served to **promote inclusion and access to the arts and music education**, a benefit that has become even more relevant during 2020 at a time when the COVID-19 pandemic was depriving many young people of educational opportunities.

5. Sources to corroborate the impact (indicative maximum of 10 references)

A. *Connect: Resound* - Research and Development Report - A Summary
B. *Connect: Resound* Digital R+D Project (NYMAZ video) (available at https://www.youtube.com/watch?v=CQcLJc9JrLI and as a video file on request)
C. NYMAZ Connect: Resound online resources & tools for teachers (available at https://www.nymaz.org.uk/connectresound/resources and as a pdf on request)
D. Email from Head of Music Service, North Yorkshire
E. Testimonials from NYMAZ (Project Manager Connect: Resound [E1] and Director of NYMAZ [E2])
F. Details of Remote Learning Network Conference June 2016
G. *Connect: Resound* New Contexts - Evaluation Summary Report
H. *Connect: Resound* - Findings from the National Rollout 2015/16
I. *Connect: Resound* Live case study - The Norfolk Virtual Big Sing (available at https://connectresound.live/2020/02/13/case-study-the-norfolk-virtual-big-sing/ and as a pdf on request)
J. Screenshots to validate number of live streams of concerts
K. *Connect: Resound* case study on Inspire-Music website (available online at https://www.inspire-music.org/case-studies/67-connect-resound and as a pdf on request) and letter from Sonustech Ltd. (responsible for management of the Inspire-Music portal) confirming the number of times the case study has been accessed