

Institution: De Montfort University		
Unit of Assessment: 33		
Title of case study: Electroacoustic Music: Enhancing 'Sonic Creativity' in Schools and Communities Across the World Through eLearning and Specialist Software		
Period when the underpinning research was undertaken: January 2001–present		
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:
Prof. Leigh Landy	Professor of Contemporary Music	September 1999–present
Dr Motje Wolf	Senior Lecturer	January 2008–present
Period when the claimed impact occurred: October 2013–December 2020		
Is this case study continued from a case study submitted in 2014? No		
1. Summary of the impact <p>Professor Leigh Landy's research into listening to, learning about and creating electroacoustic music has changed appreciation and understanding of a genre that was previously almost completely absent from school curricula. An eLearning site, EARS 2, and creative software, Compose with Sounds (CwS), have expanded music education and encouraged artistic potential among targeted age groups, particularly pre- and young teens; by late 2020 there were 20,000 monthly EARS 2 online visitors. Since late October 2013 over 4,000 people (teachers and students) around the world have attended hundreds of workshops, classroom sessions and other events. Educational materials are now available in 10 languages, directly resulting in ministries, educators and cultural organisations in 5 countries having promoted the widespread adoption of sound-based music education in classrooms.</p>		
2. Underpinning research <p>It is no easy task making innovative music, in this case electroacoustic (sound-based, not note-based) music, accessible. Although digital electroacoustic sounds are ubiquitous today, the gap between current and potential appreciation and participation levels remains substantial. Over three decades, Landy's research has aimed to make sound-based music relevant to music educators and enthusiasts, by determining potential interest, facilitating increased participation and influencing educational policy.</p> <p>(1) EARS (ELECTROACOUSTIC RESOURCE SITE) PROJECT</p> <p>Landy conceived the EARS project in 2001 as a resource, with a glossary, a subject index and a bibliography, that would enable people, mainly university-level students and professionals, to engage with the challenge of terminology and find literature related to their own interests, see who was working in an area similar to their own, and identify potential gaps in research. Over a six-year period, over 500 terms and 5,000 bibliographic entries were added and many translated into French, German, Spanish and Italian by an international consortium of specialists [R1, G1, G2].</p> <p>(2) INTENTION/RECEPTION (I/R) PROJECT</p> <p>From 2001, Landy's I/R project has set out to examine to what extent electroacoustic composers' intentions are being received by listeners of various levels of experience, and to what extent listeners with no previous experience of electroacoustic music might be interested in further exposure to similar works. From 2003 to 2007 in Leicestershire, and in 2019 (as part of Interfaces) [G5] elsewhere in the UK and Greece, around 800 participants from schools and workshops completed questionnaires and talked informally during and after a music session. A quantitative data analysis showed that electroacoustic works are more accessible than the researchers anticipated: between 55% and 79% of listeners were interested in further exposure to sound-based music. Data gained from this project led Landy to his educational initiatives, in</p>		

particular, EARS 2/CwS [R2].

(3) SOUND ORGANISER (LATER, COMPOSE WITH SOUNDS, OR CwS)

In 2007 Landy organised the design of a prototype for Sound Organiser, audio software that is based on a computer games approach: the higher the level one reaches, the greater the palette of opportunities and challenges on offer. In 2013 this was renamed and launched as Compose with Sounds (CwS) [R4], an intuitive, easy-to-learn, free composition software with powerful forms of sound manipulation which allow users to compose music creatively with any sounds.

(4) EARS 2

In 2008 UNESCO, a supporter of EARS, asked Landy to create an 'EARS for children'. With DMU education specialist Dr Motje Wolf, Landy investigated the feasibility of supporting several countries' national curricula for music while broadening the horizon of their offer in terms of sonic creativity [G3–G5]. Wolf created EARS 2 Teachers' Packs, and in 2012 Landy published the first comprehensive book on sonic creativity for teachers working with 11- to 14-year-olds, *Making Music with Sounds* [R3]. Its structure ensured that EARS 2 could be easily navigated by music novices. The incorporation of CwS into EARS 2 in 2013 offered a complete learning and creative environment for people, especially students at Key Stage 3 with no previous knowledge of sound-based music [R5]. Extensive user feedback from the start has led to continual enhancements [R6].

3. References to the research

- [R1] Atkinson, S. and Landy, L. (2004) 'The ElectroAcoustic Resource Site (EARS): philosophy, foundation and aspirations', *Organised Sound*, 9(1): 79–85; <https://doi.org/10.1017/S135577180400010X>
- The first of many articles and an MIT book about the site and its role within Electroacoustic Music Studies.
- [R2] Landy, L. (2006) 'The Intention/Reception Project', in M. Simoni (ed.) *Analytical Methods of Electroacoustic Music*, New York: Routledge, pp 29–53 + addenda on DVD; ISBN 9780415976299
- This commissioned chapter in a key electroacoustic music analysis volume demonstrates empirical data regarding potential interest in electroacoustic music by 'inexperienced listeners'.
- [R3] Landy, L. (2012) *Making Music with Sounds*, New York: Routledge; ISBN 9780415806787
- A commissioned book based on years of applied research, written mainly for teachers for classroom work.
- [R4] The EARS 2 (ElectroAcoustic Resource Site Pedagogical Project) website: <https://ears2.dmu.ac.uk/> including Compose with Sounds area from 2014: <https://ears2.dmu.ac.uk/cws/>; Composing with Sounds from 2013. Freely available eLearning site and creative software platform (can be used independently).
- [R5] Landy, L., Hall, R., and Uwins, M. (2013) 'Widening participation in electroacoustic music: the EARS 2 pedagogical initiatives', *Organised Sound*, 18(2): 109–123; [Polish version: 'Wprowadzanie młodzieży w świat organizowania dźwięków: EARS 2 i Compose with Sounds' (trans. Małgorzata Cnota). *Glissando* #27, 11/2015 "Dziecko" (Theme: The Child), 83–89]; <https://doi.org/10.1017/S1355771813000034>
- Article on EARS 2/Compose with Sound, peer reviewed and a key resource in the field of electroacoustic music studies; the Polish version was invited.
- [R6] Pearse, S., Landy, L., Chapman, D., Holland, D. and Eniu, M. (2019) 'Composing with Sounds: designing an object-oriented DAW for the teaching of sound-based composition', in I. Barbancho, L.J. Tardón, A. Peinado and A.M. Barbancho (eds)

Proceedings of the Sound and Music Computing (SMC) Conference 2019, Malaga, Spain, pp 310–315; ISBN 9788409085187

SMC is a leading computer music. This contribution focuses on the ideas behind the software, its development phases, the integration of feedback and impact.

GRANTS

EARS project

[G1] Arts and Humanities Research Board/Council (AHRB/AHRC) 2000–2008: GBP177,000.

[G2] UNESCO 2007–2008: USD6,000.

EARS 2 – Compose with Sounds

[G3] Higher Education Innovation Fund (HEIF) 2011–2015: GBP108,572.

[G4] Creative Europe – Composing with Sounds (CwithS) 2011–2013: EUR191,808.

[G5] Creative Europe – Interfaces 2016–2020 EUR3,720,000.

4. Details of the impact

Professor Landy's research into electroacoustic music made a compelling case for its accessibility in terms of both appreciation and activity, and informed its inclusion in the music education and creative participation of young people aged 11–14, older students and adults in countries across the world. The resources have been translated into French, Spanish, Greek, Czech, Portuguese, Italian, German, Swedish and Norwegian and endorsed by ministries of education and cultural organisations in Greece, Cyprus, France, the UK and Mexico. In December 2020 there were 20,210 visitors to the website, almost double the previous peak of 11,025 visitors in January 2018 [C1].

(1) IMPACT ON LEARNING AND PARTICIPATION: ENGAGING YOUNG PEOPLE IN SONIC CREATIVITY

From 2011 to 2013, the EU's cultural programme supported the CwS initiative, focusing on the creation of the initial CwS platform for EARS 2. The platform was widely used in (mainly) secondary schools in the UK, France, Germany, Greece, Norway and Portugal, and its website went live in October 2013.

For their compositions, music students collected a diversity of sounds, from the domestic (a coffee cup clattering in the sink) to the ethereal (a waterfall in a gorge) and, with the help of teachers and composers, transformed them into a piece of music with the software. A teacher at the Conservatoire in Bourges, France, said about the composition 'Retour aux Sources': 'I only used sounds in this piece that were generated by the children as part of their activities related to inventing sounds and composing with them' [C2].

Between 2016 and 2019, Landy and Wolf worked with the Leicester-Shire Music Education Hub, a collaboration of local educators, composers and community artists, to develop and run 47 EARS 2/CwS workshops with more than 400 participants at 7 schools (ages 9–15) in Leicester, Leamington Spa and Coventry, as well as 3 community settings (with a wider age range). When asked if they would like to listen to or make sound-based compositions again, participants' responses included: 'Yes, because the sounds sound like music, even if they originally weren't' (Year 5, girl); 'It's fun to find new sounds and experiment with them' (Year 9, boy); and 'I really enjoyed the opportunity to be creative and express my own ideas' (teacher) [C3]. A Year 6 music teacher praised the teachers' resources as previously the subject had been 'out of her comfort zone' [C4].

The head of music technology at the Hub, said that EARS 2/CwS 'demands no musical literacy' and can be 'shared by all'. 'EARS 2 is what one might call a "complete curriculum", covering a wide range of topics (breadth) at various learning levels (depth). As far as I know, it is completely unique and also extremely valuable, not least in terms of our National Curriculum' [C4]. Although further workshops have been largely on hold during 2020, he has formally recommended the 'low-anxiety' resources for use in other hubs' geographic areas on the website [C4].

(2) IMPACT ON CULTURE AND SOCIETY: BRINGING NEW MUSIC TO NEW AUDIENCES

Following the success of the CwS project, from June 2016 to September 2020 DMU was a partner in the EU's Interfaces project [C5] with the aim of 'bringing new music to new audiences' through community arts projects, performances, site-specific events and workshops. Besides funding the phase 2 development of EARS 2/CwS (e.g. multiple languages) [G6], Interfaces has enabled translations and workshop opportunities, as well as creating pathways for official endorsements (NB: EARS 2 was cyber-attacked in May 2018 and not publicly available for a number of months until fully rebuilt; CwS also underwent significant recoding due to Windows/Mac OS upgrades as reflected in, for example, C3).

A freelance composer and musician conducted community workshops in 2017 and 2018 for adults aged 18 and over in the UK and Greece, involving 230 school students, 70 tertiary students, 60 adults in community workshops, 10 teachers and 77 experts [C5]. Referring to the eLearning platform and software as 'intuitive for starters', he says: 'Our experiences with [them] have clearly demonstrated that, not only is this a way of engaging more people in creative practice, but it offers a unique "way in" to a wider range of participants than many of the more traditional genre-based approaches' [C3]. He continued to use EARS 2/CwS during the pandemic, in online workshops for young people organised by Scotland's Sound Festival in April 2020 [C3].

In 2018 Landy conducted a two-day workshop in Prague for 60 HE students from Charles University and the National Academy of Performing Arts (AMU). An Associate Professor of Composition at AMU wrote: 'Many Charles students [media] not only plan to use the software again, but are enthusiastic about using sound-based sampling in their work'. '[One] of the participants, having been introduced to the EARS 2 website in your first day session even proposed to make a Czech version of it'. She completed this in 2020. Some documentation of the workshop can be found [C7].

(3) IMPACT ON MUSIC EDUCATION POLICY: PROMOTING SOUND-BASED MUSIC LESSONS IN SCHOOLS

With the implementation of language translations and cultural adaptations to the new versions of EARS 2/CwS in the late 2020, benefits have been achieved in a number of countries where ministries, cultural institutions and music education specialists have advocated for the widespread adoption of the revised resources and tools in schools.

In the UK, Sound and Music, an affiliate of Arts Council England that supports the creation and enjoyment of new music, has endorsed EARS 2/CwS for use in schools and workshops on its website and in newsletters to young people and educators, reaching 325 and 987 people respectively [C6].

In 2014 in Cyprus, the music inspector for secondary education at the Ministry of Education and Culture, says: 'The Ministry made the decision to recommend the use of Compose with Sounds in our Music Schools and in the music classroom as part of our national curriculum'. In consequence there is an 'increased number of events in Cyprus that include electroacoustic music and concerts with electroacoustic music compositions from our students' [C8]. It was the first country to do so following a workshop by Landy and a music technology teacher in Cyprus [C8]. Since then, 250 students have been introduced to the software [C8].

After introductions in schools in Greece in 2014 and again in 2017 from our partner, Ionian University [C9], teachers felt that they needed a Greek-language learning environment. An online demonstration of EARS 2/CwS and its potential in educational contexts in late 2020, attended by over 150 teachers and which remains available online, prompted the Greek Society for Music Education (GSME) to recommend EARS 2/CwS for use in all Greek schools, especially at post-primary level (> 3,000 schools) [C9]. Without a national curriculum, GSME is where 'music teachers come for information on new valuable developments', says the GSME president. 'We feel it is our responsibility to encourage dynamic, up to date music teaching. Making music with sounds is something that [children] should all learn about and make' [C9].

Mexico's National Centre for Music and Sonic Arts (CMMAS) provides local, state and national authorities with suggestions regarding educational tools for music and encourages their

integration into schools' music programmes. Following their translation and cultural adaptation (which CMMAS oversaw) into Spanish in 2020, 'these resources are now ideal for Mexican and Latin American schools', says the director of CMMAS. 'We are officially endorsing their use ... particularly for late primary and early secondary levels and for community artists working in the field'. He added that, 'the ability for children to quickly become enthusiastic and well informed about various forms of electro-acoustic music is just what our schools need. Offering them the chance to be creative and gain confidence in their creativity regardless of available tools is just what our country needs' [C10].

In France, the Inspé d'Aix-Marseille (National Higher Institute of Education and Teaching at Aix-Marseille University) 'trains and provides guidance and recommendation to primary and secondary school teachers in France'. Their team 'made a rigorous analysis of the pedagogical approach provided by this resource' and concluded that EARS 2/CwS 'offer a major contribution to the pedagogy of acousmatic music' and 'make a major contribution to the development of the abilities of a large number of students regarding the perception and production of electroacoustic music'. The platforms support 'the development of their skills in the two central activities of the French musical education curriculum: perception and production' [C11].

5. Sources to corroborate the impact

- [C1] EARS 2 stats March 2020–December 2020 and EARS 2 stats January 2014–May 2018.
- [C2] EARS 2 website: <https://ears2.dmu.ac.uk/cws/about-the-composers-and-the-music>
- [C3] Testimonial letter from freelance composer, 8 December 2020.
- [C4] https://www.youtube.com/watch?v=lvPA2jfvC4&feature=emb_title
Testimonial letter from Assistant Head of Leicestershire Schools Music Service, 3 December 2020.
<https://leicestershiremusichub.org/musical-solutions>
- [C5] www.interfaces.dmu.ac.uk
Final Report, Interfaces Activity Report 'Sound-based creativity in schools' 2019.
- [C6] <https://soundandmusic.org/post/de-montfort-university-launch-new-resource-for-young-composers/>
Testimonial letter from Head of Education, Sound and Music (UK), 2 December 2020.
- [C7] Testimonial letter from Associate professor of Music, Music and Dance Faculty of the Academy of Performing Arts, Czech Republic 2 November 2018.
<http://www.snmsounds.cz/sample-based-music-workshop/>
- [C8] Testimonial letter from Music Inspector for Secondary Education (Cyprus), 10 December 2020.
Testimonial letter from Music educator and school teacher (Cyprus), 10 December 2020.
- [C9] <https://www.eeme.gr/en/info/interesting-links.html> (in English);
<https://www.eeme.gr/info/activities/old-activities/3033-ears2.html> (in Greek)
Testimonial letter from Music Educator, President of the GSME (Greece) 21 November 2020
Testimonial letter Associate Professor, Dept. of Music Studies., Ionian University (Greece) 27 November 2020..
- [C10] Testimonial letter from Director CMMAS (Mexico) 26 November 2020.
- [C11] Testimonial letter from Co-director Inspé (France), 2 December 2020, with translation.