
Editorial: Radical education in electronic music, past and present

Research on education and pedagogy makes up a small but significant portion of electroacoustic music's literature. Learning to listen critically to the modern soundscape – whether the sounds of new media or of raucous urban environments – was as important a task for early trailblazers such as Pierre Schaeffer and R. Murray Schafer as composing the avant-garde music that would respond to it. The importance of education is nowhere better evidenced than in the centrality of the ever-pliable metaphor of 'listening' within electroacoustic music's literature. Although appeals to listening usually refer to the delegation of creativity and meaning-making to audiences and away from composers – for example, in the idea of soundscape composition or sound art as 'arts of listening' – the concept equally implies ideas about learning, education and even retraining as it pertains to new music. Indeed, it could be argued that, as much as differences of style and conceptualisation, it is in their divergent ideas about education that modernists such as John Cage, La Monte Young, Pierre Schaeffer, Iannis Xenakis, Pauline Oliveros and others acquire distinction as theorists. Consider, for example, John Cage's criticism of La Monte Young that his approach to listening was akin to the institutions of the school or monastery (Joseph 2008: 137), or contrast both composers' ideas with Iannis Xenakis's UPIC instrument, designed for young children with the aim of connecting concepts in drawing to sound (Nelson 1997). Within these, we find wildly differing ideas about learning and education, from the ear-as-creative agent approaches that characterise post-Cagean sound-in-itself, to the disciplinarian emphasis on 'retraining' and 'deconditioning' that appears in so much modernist music and art theory (Schaeffer 1966: 478–9; Turner 2013).

In looking for broad coordinates for the educational theory underpinning the field, one starting point might be the pervasive influence of Marshall McLuhan on the mid-century technological arts–discussed in Gayle Magee's chapter in this issue. A key theoretical reference and occasional interlocutor for Cage, Schaeffer and Schafer, McLuhan has also been credited with updating the student-centric progressive education practices of John Dewey for a world in which new communications media were questioning the legitimacy of traditional disciplines and literacies (Kuskis 2012:

323). In acoustic ecology's high-fidelity derivés into the city, or in Pierre Schaeffer's attempts to develop aural literacies adequate to the phonograph and loudspeaker, we see the mark of McLuhan's vision for uprooting what Paul Levinson called 'place-based, book-paced' ideas about education (Levinson 1999: 116). Where today the salient boundaries and thresholds of music studies are concentrated within research – for example, between practice and research, or performance and research – mid-twentieth-century educators were thinking deeply about boundaries germane to education, whether between classroom and city, text and new media, or students and teachers. It is as much an achievement of these educational experiments, as it is of their substantive repertoires, that musique concrète and acoustic ecology grew to be the transnational fields they are today (Valiquet 2017).

The progressive education principles that contemporary electroacoustic music studies inherited supported a field expanding outwards to face an ever-more globalised, technologically interconnected world. However, this vision looks quite different from the perspective of the mid-2020s. The McLuhanite hope that information media might democratise the public sphere, improve the quality of information, and mitigate against top down autocracy looks charmingly naive in the wake of what some have termed an 'information dark age' (Hannah 2021) populated by esoteric online conspiracy theories, disinformation and synthetic media. Some would argue that twenty-first-century media ideologies are too remote from musical matters to warrant serious discussion. But what are we to make of hopes of disciplinary growth as the attack on universities and humanities teaching bites? In Britain, the post-1960s expansion of higher education, which boomed in the early 2000s mass education drive under New Labour, is being undone by stealth. Cuts to the humanities, together with the debt-driven de-incentivisation of university education to working-class young people, have led to department closures and redundancies across 66 UK universities (Queen Mary University College Union 2024). Neoliberalisation has meant that, when departments close, failure can be presented as the market simply having its say, rather than as an intended effect of the system. Music departments have, as we know, been particularly badly affected by

the rollback of mass education. As of this writing, Goldsmiths world-renowned Electronic Music Studios and Sonic Arts programme holds on by a thread. Before it, music departments with electroacoustic music and sound art specialisms at Dartington College of Arts and University of East Anglia were closed. The list of departments that have been downsized by forced redundancies, or faced programme closures, is considerably longer (Pace 2024).

Disciplinary etiquette tends to keep the policy climate around higher education away from the pages of scholarly journals. While pedagogy is widely discussed, prevailing wisdom has it that open discussion of the crisis is ‘talking down’ the humanities, or giving policy makers fuel for further destructive fire. Within music, the few who do speak publicly have tended to do so only in order to further their own factionalist agendas, whether by misrepresenting the crisis as specifically a crisis for ‘classical music education’, caused in part by ‘social justice activists’ operating within the discipline (Pace 2023), or by making similar arguments in order to describe into existence a post-university vanguard that they would personally lead (Valiquet 2020). When these are the positions on offer, it is no wonder that most choose to save their comments for social media pages. But it is a mistake to pass in silence the damage that has incurred. In the first instance, we should simply find space to celebrate the incalculable contributions to music, the humanities and the culture that the electronic music specialisms at East Anglia, Goldsmiths, Dartington, and the many other departments that are under pressure, are responsible for. But most importantly, we should be clear-sighted and honest about the political context of music and music education today. Thirty years ago, responding to the failure of musicology to deal with the political contents of Black popular music, Philip Bohlman wrote ‘the act of essentializing music, the very attempt to depoliticize it, has become the most hegemonic form of politicising music’ (Bohlman 1993: 419). Today, we might modify Bohlman’s statement to recognise the *selective* politicisation of music as a form of depoliticisation. Political aesthetics, the ‘socio-sonic’, critical listening practices, sonic politics – these concepts are political only insofar as they grasp the *full scope* of twenty-first-century music’s political life – the *conjuncture* as Stuart Hall termed it (Hay, Hall and Grossberg 2013). As the means through which we imagine and create the future, the situation of universities and arts education should not be omitted from this analysis.

Foregrounding education in the arts and humanities takes us away from the competitive individualism that can oversee research and composition, and enjoins us to think instead of shared practices and collaboration. Indeed, education is often theorised as reproductive rather than productive: both in the Bourdieuan sense

of reproducing the power relations that exist in society and in the Marxist-feminist sense of education as a lower-status reproductive labour than the productive work of research (Cusick 1999). Provocative though the frame of *radical* education in the title of this issue undoubtedly is, we wanted to connect the future of the arts and humanities to the post-war initiatives that saw the democratisation and politicisation of education as a battleground through which to realise the world anew. We were enthused by the electronic musics that took influence from the critical collective education and ‘deschooling’ practices of community institutions such as the AACM (Lewis 2008), or that grew in the art schools, polytechnics, post-secondary, anti-universities and other informal institutions that nurtured genres such as punk, post-punk and new wave (Frith and Horne 2016; Butt, Eshun and Fisher 2016; Butt 2022). And we also saw evidence for radical education in twenty-first-century electronic music; for example, in Mike Huckaby’s YouthVille in Detroit, King Britt’s Blacktronica course, Dweller Forever (2021), and Sherelle’s BEAUTIFUL project – all of them undertaking vital work preserving and reproducing Black electronic music practices and histories for the coming generation of musicians and researchers.

Did we succeed in the call for papers? We were fortified by the mix of submissions we received, which as well as traversing many of the themes in the call, also drew in topics we did not anticipate – particularly on access in music technology. While we expected a greater concentration of articles in contemporary areas given the journal’s focus, it was encouraging to also receive a number of high-quality historical submissions (Bertolani, Magee). Politicised work was in abundance; for example, in those works addressing the absence of a politics of race to the world fairs that informed Murray Schafer’s pedagogical projects (Magee), or the need for one in addressing AI-powered cultural appropriation (Adu-Gilmore). We perhaps did not find the contemporary para-sites and under-universities we were looking for in contemporary electronic music, or the historical cross-fertilisation of electronic music with earlier radical education initiatives, including the art colleges. Describing attempts to enrol musicians from outwith the university, Tony Myatt offered some wisdom for us on this matter, stating in a previous editorial for this journal that such efforts ‘can often flounder because of time pressures on contributing authors by their employers, their ability to sustain the act of writing an article (financially) and unforeseen circumstances which can be encountered through the long compilation process’ (Myatt 2008). There are also the barriers artists can face when required to articulate themselves in a manner that meets academic conventions and standards, an issue highlighted by Maria Chavez in the interview with

her in this issue. There will always be the question of whether endeavours that seek to build alliances between academic and non-academic communities are better than seeking new forums rather than working with existing ones. Although Open Access journals will not solve the problem of incentivising writing for artists and authors who have no other source of income than their work or writing, it is possible that such forums would be better placed to build good will.

Beyond the case of academic publishing, contemplating the future of education enjoins us to return to the questions of disciplinarity, institutionality and discourse that have long dogged electroacoustic music studies. Despite the tweaks to music curricula that were accommodated in the wake of Black Lives Matter, the huge creative and technological innovation that has stemmed from Black electronic music remains largely unaccounted for within the field – either disregarded as popular music despite sharing similarities of technique going back to dub, or recognised only insofar as it finds recycled expression in the ‘experimental electronica’ of white, European musicians. Music technology and production courses, often delivered in specialist private colleges and oriented more closely to industry, are more responsive to Black electronic music. However, so long as the durability of the ‘industry’ these students are being trained for is in question, so is the durability of these institutions – even in spite of their huge popularity in the current moment. In light of the attacks on higher education, perhaps we need to return to the question of what relationship electroacoustic music studies bears to its Others with renewed purpose. Art theorist Peter Osborne (2022) has recently called for ‘new music’ to move beyond the assimilative tendency of the post-Cage arts, and to instead develop a critical concept of *music* adequate to its contemporary situation. His call is for greater critical deduction in delineating the boundaries of music, so that rather than simply growing to accommodate ever greater contents, we start asking where the edges of music lie – if they exist at all. Does the splintering of music into electroacoustic music, sonic arts, new music – and the hesitation around these terms – also represent a problem in terms of the discipline’s social coherence? Put another way, what solidarity can electroacoustic music studies call on in the battles to come, for example, from ‘traditional music’? And what solidarity can it confer to its own outsiders in the same battles, whether they be the many names that circulate for ‘independent’ electronic musics (Haworth 2016), or the pioneering Black electronic musics that those musics in turn keep at a distance? Who knows: perhaps the terminal vagueness that dogs our analytical vocabulary will be resolved as a byproduct of the battle for education.

Gayle Magee’s article “‘To Explore the World of Sound’: Music, silence, and nation-building in *Bing Bang Boom* (1969)’ takes an episode in R. Murray Schafer’s early career to examine the politics of sound, silence and silencing in R. Murray Schafer’s work. Magee’s article focuses on a strand of Schafer’s work that has seen precious little discussion in either electroacoustic music studies or sound studies: Schafer’s educational theory. As already stated, Schafer was keenly influenced by Marshall McLuhan. Magee’s article begins by chronicling Schafer’s early contact with McLuhan, from attending his class on Music and Poetry, to participating in the McLuhan-inspired media-extravaganza, Expo 67. As Magee shows, both the Expo and McLuhan’s notion of the global village fed into wider efforts to shape Canadian national identity around the English language, technologically enabled global interconnection and progressive education. This, at the same time, meant completely absencing the Francophone Canadians, first-generation Canadians, and Indigenous peoples whose claims to the land long preceded the English-speaking cosmopolitan Canadians. In a careful, contextualist reading that draws audiovisual media, technical drawings and memos from the National Film Board of Canada Institutional Archives together with analysis of Schafer’s published writings, Magee compares film of Schafer’s classroom teaching in a middle-class school in Scarborough (the documentary *Bing Bang Boom*) with another documentary of a residential school for Chippewa and Mississauga people in Dauphin Manitoba. In contrast with the Scarborough class where students were ‘encouraged to listen for silence’, she finds that silence at the residential school was imposed on the students, who ‘were punished for making sounds such as speaking in their own language, singing their songs and reporting abuse’. Adding to recent revisionary scholarship by figures such as Dylan Robinson and Mitchell Akayama, Magee shows how the very same ‘curated, privileged, and racialised view of Canadian culture’ that was propagated at the Expo and McLuhan’s global village prevailed in Schafer’s classroom teaching.

Pérez-Valero addresses radical electronic music education in Venezuela. Known to the musical world primarily through El Sistema, the publicly funded, free classical music education programme for children from deprived backgrounds, Pérez-Valero’s article addresses the situation of electronic music in the context of what, to many observers on the outside, is seen as a cultural miracle (albeit one that has seen criticism, cf. Baker and Frega 2018). Pérez-Valero surveys historical documents as well as conducting unstructured interviews with musicians and educators. He finds that, in contrast with the national music education project, electronic music education finds

little centralised consolidation in universities or aesthetic schools. This is not for lack of interest or specialism: the work of Segnini Sequera, or the Venezuelan Society of Electroacoustic, are both surveyed in the article. However, as Pérez-Valero notes, Venezuela 'is facing the greatest academic disaster in its history, with the de facto disappearance of various educational institutions, the absence of research centres and archives that allow researchers to have access to materials for a bibliographic review under minimally acceptable condition'. Interpreting this situation of fragmentation and absence, and how it might be channelled into a progressive education project, adapts the concepts of radical education theorist, Eli Meyerhoff, so that they fit the academic and economic context of electronic music in Venezuela. Of particular concern for Pérez-Valero is the lack of durable institutions for electronic music, usually as a byproduct of the lack of state support. This leads to the double-faced conclusion that electronic music entails 'a constant restarting of activities that assumes that there is no immediate past' and that it is not well suited for the integration into a state project.

Valentina Bertolani's 'Mario Bertoncini's Musical Design Course: Between Renaissance pedagogy and contemporary research-creation' draws on document-based historical interpretation and oral history to analyse the educational work of Mario Bertoncini during his time at McGill University in the mid-1970s. An understudied figure, the primary aim of Bertolani's article is to illuminate Bertoncini's contemporaneity via a focus on Bertoncini's educational initiatives. Specifically, she draws out the implications of Bertoncini's short course at McGill, titled Musical Design, for contemporary formulations of what, in the UK and Europe, is called practice-research, and in Canada, research-creation. Although situated between engineering and music, the Musical Design course as chronicled by Bertolani differs from the more well-known efforts to fuse engineering and music, whether in large institutions such as IRCAM, or in small cybernetics-inspired collaborative forums such as Groundcourse. The picture Bertolani paints of the Musical Design course is in fact closer to an artisan maker studio where musical performance, composition and instrument building fold together under the sign of 'design'. Indeed, as Bertolani shows, Bertoncini took a steer from the elite *botteghe d'arte* workshops of the Renaissance, which were at once interdisciplinary in social makeup, practical in terms of their method and outcomes, and holistic in their envisioning education beyond the stagist restrictions of formal education. Following historian of science Pamela H. Smith, Bertolani terms this an 'artisanal epistemology' in which the purpose is the cultivation of craft: how-to

knowledge not generalisable in any way, 'partly because it deals with materials and specific instances and circumstances that are irregular and absolutely particular, and partly because the knowledge itself cannot be written down and transferred in texts from one person to another' (Smith 2007: 34–5). The task for the present, she writes, is for educators to be able to appreciate this diversity and teach it with confidence.

Jake Williams's article addresses educational provision for DJing in schools. Since 2016 it has been possible for Music students to take 'DJing' as an 'instrument' for the performance component of the GCSE assessment (exams taken by 16-year-olds in the UK across a range of subjects). The development of the assessment criteria for DJing was heralded as 'a challenge to colonisation' in the school curriculum; however, the option remains largely unadopted due to perceived expense of the equipment and a lack of awareness among potential tutors. Between 2022 and 2023 Williams held two workshops with different sets of Year 10 (14-year-old) Music students at a school in North East London using relatively affordable, entry-level consumer digital DJ technology. Employing a freeform approach inspired by abstract turntablism and untethered from the expectations of normative EDM practices, he observed how the students approached the technology in terms of both technique and audio content. The framing of DJ practice as akin to other instruments in the context of the assessment is evaluated, drawing on his own work as well as that of radical practitioners such as Venus X and DJ Spooky, as are the claims of decolonisation originally made for its inclusion within Music. The assessment criteria for GCSE Art and Design are also considered, and the question posed whether this framework might be a better fit for DJing.

Leila Adu-Gilmore frames DJs and producers as radical archivists and cultural curators, using 'radical' in the sense of working with the Black radical tradition. As she argues, DJing is already a kind of radical archiving practice. The music collections DJs amass can represent vast personal archives. But equally, DJs can weave discursive narratives through their mixtapes and DJ sets, just as producers can do so via sampling – both draw out historical connections, while simultaneously exposing listeners to new musical forms. And in doing so, both can participate in informal networks of community education and mentorship. Adu-Gilmore interviews practitioners TAYHANA (from Mexico) and Esa Williams (from South Africa), also detailing her own work on the Global Electronic Music course and the Critical Sonic Practice Lab at New York University. These personally curated, contextually rich archiving practices are critically compared with AI-powered algorithmic recommendation systems, which also perform a kind

of archiving. In her analysis, Adu-Gilmore reveals many issues with the datasets, including bias, opacity, the disembedding of music from its local scenes and cultures, and the reinforcement of neo-colonialism through the omission of artists of colour.

'Models of Teaching, Magazines and Music Machines: Alternative approaches to electronic music education in Melbourne' by Michael Callender, Dylan Davis and David Haberfield focuses on electronic music education in Melbourne, Australia. The empirical focus of the article is the largely informal 'alternative education' fora offered by community centres, nightclubs, retail stores, message boards and magazines from the mid-1960s to the present. Cases include Keith Humble and Geoffrey D'Ombain's early initiatives in secondary and post-secondary education, which built on Australia and Melbourne's status as a pioneer in electronic and computer music; artist-led education via the avant-garde *NMA* magazine of 1982–1992; and community education inclusive of short courses (1970s onwards), nightclubs and dancefloors (1980s on), the internet (1990s on), and specialist non-profit spaces (00s on). Callender et al. use analytic philosopher Israel Scheffler's 1967 text, *Philosophical Models of Education*, to identify and categorise modes of learning and knowledge acquisition in the alternative spaces of Melbourne's DIY spaces. A goal-oriented model of teaching and learning which focuses primarily on the cultivation of individual judgement, they use it to highlight the positive roles music retailers play, in tandem with community organisations, to identify educational 'gaps that traditional education providers have ignored'.

Pedagogical approaches in music and audio education for deaf and hard-of-hearing students by Lee Cheng offers practical proposals for improving access to sound and music experiences for deaf and hard of hearing (DDH) students. Situated in relation to the small but important history of progressive education initiatives around disability and access in electroacoustic music – notably accessible and adaptive digital musical instruments – Cheng assesses strategies for developing music and audio production competencies for DDH students, including sound visualisation, non-linear editing, haptic feedback and automated transcription methods. In this way, the article advances a view of hearing impairment according to the social model of disability, in which impairment happens not through the failure of an individual body, but through the failure of societies to accommodate all the bodies they provide for.

Ariane Stolfi, Daniel Puig, Deivison Chioke and Júlio César de Carvalho detail their work on the 'Sound, Image, and Motion (SIM)' programme at the Federal University of Southern Bahia, Brazil. An interdisciplinary course that updates Bahia's long

history of avant-garde music and experimental and digital art with a focus on sound, the course that is described is akin to Music Technology degrees in the UK and Europe. However, the political context for SIM is quite different. The Federal University of Southern Bahia is built on democratic principles of access and inclusion, informed by the ideas of Brazilian radical education theorist Paulo Freire. Created in the wake of the expansion of education by the Worker's Party in 2013, the course seeks to use interdisciplinary training as part of an effort to decolonise higher education. With the majority of the students being drawn from 'minorities and social classes historically excluded from higher education', including with close ties with local traditional communities, SIM offers a hopeful vision for electronic music education in the twenty-first century.

Bringing in some voices from outside of academia, Jake Williams interviews Maria Chavez and Elijah. Both are DJs but each comes from different worlds: Chavez, a Peruvian who grew up in Houston and now lives in New York, is an abstract turntablist known for working with broken vinyl, customised needles and chance operations; Elijah, an East Londoner who made his name co-running grime label Butterz, is an artist manager and DJ. The interview focuses on the educational initiatives they each have developed, notably, Chavez's turntablism workshops and Elijah's Instagram-based *Yellow Squares* project. The discussion traverses their approaches to teaching history, negotiating institutions, open source education and more. They conclude with their passionate thoughts on DJing as a unique and valuable tool for musical inspiration and development in schools and care homes, and for all music lovers.

Mary Mainsbridge analyses the work of Laetitia Sonami and Lauren Sarah Hayes who both develop their own instruments as part of their embodied, improvisation music practices. Their work is examined in the context of research into the white, male-dominated spaces of instrument technologies and software coding and associated design values of 'newness', 'innovation' and 'smoothness' that are mythologies based on the most visible narratives of the time. Mainsbridge frames Sonami and Hayes' work in a wider frame of an intersectional feminist human-computer-interaction (HCI) which encourages alternative values such as 'belonging, empathy, care, and other aspects of human connection'. They employ auto-ethnography of their embodied experiences with the instruments, but their design processes are also often collaborative, working with other practitioners via iterative performance and workshopping strategies.

Tiernan Cross's article returns to a favourite theme of *Organised Sound* and a mainstay of electroacoustic

music education – Dennis Smalley’s theory of spectromorphology. Spectromorphology offers a detailed taxonomy for describing the perception of ‘sound-shapes’ and ‘spatial gestures’ in electroacoustic music, building on Pierre Schaeffer’s *Solfège De L’Objet Sonore*. Cross’s article takes off from what they see to be an under-discussed element of the morphological sound shape; namely, its distribution in space. Adding to recent contributions by composers Manuella Blackburn and Erik Nyström, Cross proposes a notational system addressing the co-dependency of spatial and temporal morphology in electroacoustic music perception. Using spherical and cartesian geometry, this extension allows composers to more accurately represent hitherto vague aspects such as spatial positioning and spatial movement. Cross ends the article by describing the application of their notational system in the software environments that visualise the sound field; for example, 4D SOUND and SPARTA.

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