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Discovered whilst entering a new millennium: A technological revolution that will radically influence both music making and music education

ABSTRACT

This brief position paper considers opportunities related to music making in general and music education more specifically that are evolving as a consequence of our increasingly networked world. It calls for music education to introduce music's diversity to young learners in the knowledge that the widest variety of musical repertoire is globally available by way of the Internet. Increasingly, pedagogical tools and information are supporting online communities related to this musical diversity. It proposes, too, that aesthetics, a means of encouraging musical communication, return to musical discourse, in particular in schools.

KEYWORDS

CAL
Sound-based Music
Web 2.0
Music Education
Music Communities

INTRODUCTION

This short article is a result of the combination of my keynote address to the 2011 Forum for Innovative Music Production and Composition (FIMPaC) in Leeds and an invitation by this journal's editor to submit a position paper for the current issue. As there is an existent FIMPaC/JMTE collaborative link, I thought it opportune to adapt the most relevant points from the talk regarding liveness, the symposium theme, to this issue's forward-looking vision. Thanks therefore go to both Dale Perkins of FIMPaC and Andrew King of JMTE for their kind requests.

CONTEXT-1: CENTURY BOUNDARIES

It is always wonderful to be able to step back from your own little universe and look at it from a proper distance. Whilst preparing the FIMPaC talk, called 'The Grateful "Live"' it occurred to me that there were significant musical changes, in particular in western art music, that took place around 1600, 1700 and 1800. Around 1900, similarly, very large-scale musical revolutions were to take place. Alongside these, revolutionary technological inventions were to appear that would become at least as important to the futre of music as those regarding musical content. Through radio broadcast and recordings, one no longer had to be present where music was made. Murray Schafer's schizophonia was born. Looking only a half-century later, around 1950 we see equally radical changes in music – thinking in terms of potential sonic material and how space would be treated is a good way of starting here – as in technology where every facet of music is evolving in terms of potential technological influence. In our new century/millennium, I believe that we are not encountering a musical revolution in terms of content like any of the above, but perhaps it is too early to conclude this. On the other hand, technology is taking on an increasing role in terms of music making and distribution. It is here where the main recent developments are taking place, many of which are potentially of great use to music education, and that is what the rest of this article will focus upon.

CONTEXT-2: TWENTY-FIRST-CENTURY MUSIC EDUCATION CELEBRATING THE BREADTH OF MUSICAL PRACTICES

A development in music education that is moving apace, be it at varying speeds, around the globe has to do with which canon(s) to introduce to young people. As someone working as an educator only at higher education level, it is not for me to say how much this is happening and how much impact that this has had on music education and music making internationally. What I do feel that I am able to share is the fact that my research has demonstrated that people of all ages enjoy the discovery of something new by way of something known. It is for this reason that I am of the belief and hope that twenty-first-century music education will not only expand its application of this formula, but will also continue to offer an increasingly diverse repertoire of music ranging from the omnipresent celebrity consumer culture to more focused areas of music, some more traditional and others more innovative. The open-mindedness of late twentieth-century education has been responsible for more and more young people being introduced, for example, to a number of forms of world music, again opening up horizons that were often left undiscovered in the past. My hope is that the same can be said regarding

contemporary practices including music in my own area, sound-based music in which sounds that are not necessarily identifiable as notes are the focus. Our ability to access the broadest repertoire on commercial recordings and online has been invaluable in terms of our being able to share the celebration of the breadth of music with young people. Furthermore, many musicians have opted for copyleft solutions, making their work freely available to their potential public.

Beyond the obvious skills and satisfaction that young people may gain through music education, what is transpiring is that people are also forming interest in music beyond what is heard at home or with peers thanks to a more eclectic music education. Often increased appreciation goes hand in hand with the desire to enjoy the creative opportunities that different types of music can offer.

This raises the issue of the importance of musical literacy. Most forms of music around the globe do not involve written scores. Therefore, I am of the belief that a twenty-first century music programme should offer aural and written pathways into their curricula. In my own area of sound-based music, notation is hardly used, but knowledge of other types of representation related to software or acoustic signals can be of great value.

AWARENESS-1: ON AESTHETICS AND COMMUNICATION

One of the things that I sincerely hope will (re-)emerge in twenty-first-century music education is a focus on a key aspect of music, namely communication or sharing intention and reception. This type of non-verbal communication is highly linked to aesthetics in its original (i.e. not typical twentieth-century) sense related to the beautiful or to means of placing a non-monetary value on a musical work or performance. Dramaturgy forms another type of musical intention that can also be related to musical communication. Introducing the link between intention and reception in music is a wonderful educational tool.

This interest in aesthetic awareness stems from the fact that I have predicted in several of my publications (see e.g. Landy 1996) that I expect a greater balance to be achieved in this century between twentieth-century celebrity consumer culture and smaller communities of interest. The easiest way of looking at this phenomenon is the through growth of Internet-based means of disseminating music. Although there have been thousands if not millions of records, cassettes and CDs published of non-commercial music, the broadcast outlets for less commercial music on the radio have been as marginal as the music that they represented. Some classical radio stations have attempted to create versions of pop radio with short pieces or movements to attempt to 'do celebrity culture', a fairly awkward development. The Internet offers people with similar interests and tastes various means of making, hearing and sharing music that did not exist fifteen or so years ago. As the Web becomes more sophisticated and its audio-visual quality improves, these hubs of interest may be where tomorrow's folk music and other forms, some not yet born, will be made and shared. Music education cannot ignore this exciting development.

AWARENESS-2: MOVING FROM WEB 2.0 GROUP TO WEB 3.0 INDIVIDUAL ENGAGEMENT – BEWARE!

As western music history seems to bounce between more internationalist and national or regional schools, we are also seeing a fascinating shadow boxing match between strong individualist schools of thought – think of the very

strong 'me era' within postmodernism – and more collaborative approaches. The act of devising, that is, collectively composing and performing music, is as old as music history. It is often found in jazz and continues in many forms of group music making today. That said, a large amount of music listening and music making takes place individually, similar to individuals engaged in playing or creating solo computer games.

It is often said that the development from Web 2.0 to Web 3.0 is one from folksonomies, based in the effort of a community of shared interest, to me-onomies, where technology serves individual needs. Clearly both will continue to exist; the reason for bringing this up in the context of this article is to stress the need for learners to understand that music is, indeed, about communication whether made or shared individually or collectively. The sharing can take place in an asynchronous manner: a piece of music is performed and then heard and enjoyed later thanks to our technology. This can also take place synchronously where musicians themselves are communicating with each other, such as within improvised musics as well as with their audience if one is present. Communication should be supported through the understanding of shared emotion, dramaturgy and musical content. It can take place face to face, by way of recordings or through networked environments including the Internet.

EDUCATIONAL OPPORTUNITIES

The above has been written from the point of view of music as a cultural phenomenon. Now the time has come to look within music education itself and, in our case, music education involving technological applications in music.

To start, an often-raised question: when teaching, do we teach *m*usic *T*echnology, *M*usic *t*echnology or perhaps *M*usic *T*echnology? I certainly compose focusing on the second of the three, but what do we actually teach our students? As this journal and most of its readership are setting music, not technology, at the heart of their subject, the first on the list should be rapidly discarded. Many of you may have attended a conference focusing on so-called computer music and will have discovered how many actually do focus on this one. The second suggests that technology serves musical goals; therefore, we call on technology when we need it or when it can make our lives easier. Food for thought: how often does this actually happen, however? The third, a form of Hegelian synthesis, allows one to serve the other and vice versa, a type of music technological enlightenment. One does not achieve this synergy without a supporting understanding of both. For the purposes of this article directed at people teaching young people, most of whom have been computer-literate since birth, I would suggest that music education should identify how technology can serve musical creation, musical performance, and musical dissemination/sharing and understanding based on the musical experience. Much of the relevant technology is affordable to schools (and individuals) these days. Internet music, as opposed to music on the Internet, is growing rapidly, and young people should be introduced to individual and group forms of online music making alongside more traditional forms of vocal-instrumental traditions. Many forms of Internet music typify the result of our third option with two capital letters. Similarly, young people should be offered the ability to make music with notes as well as sounds, the latter of which potentially presents different connections with their experience than by way of instrumental traditions.

The following paragraph is a short detour before returning to music technology. I do not believe that young learners are too young to think about music as a cultural phenomenon as well as music as a skills-based human activity. What I mean by this is that I do not believe that students of all ages, including my own Ph.D. students, should focus overly on the normal musical questions: 'what' type of music this is/type of materials or construction principles are relevant and 'how' a piece of music is constructed/performed. They should also focus on the 'why', that is, why make a piece in this manner? What are you trying to communicate? Where might it fit within our current musical context? Furthermore, they should focus on the 'for whom'. Not all music is made for anyone. Much popular music is made for a particular age group, a trend or a specific interest. Many other types of music share an association with a target audience. This is what is being suggested by the term communities of interest. If music is about communication, for whom are you writing this piece? Will everyone be able to understand it or some better than others? Think of a good animation film for children. Some jokes can be understood and, in fact, are made for the target age group; others are for older viewers. This ability to communicate certain things to certain people is a special ingredient in music. I, for one, was never asked about the 'why' or the 'for whom' when I studied music, but presenting music in a wide variety of contexts demonstrated how crucial both questions are.

Let us now move on to how certain aspects of technology can serve music education and focus on the Internet, music software and technology-based instruments and controllers, and finally new forms of presentation and dissemination.

First and foremost, although I am of the firm belief that face-to-face teaching is irreplaceable regarding many aspects of music, online individual and group learning is going to increase exponentially given the various types of online resources that are available. Acquiring repertoire knowledge was difficult a few decades ago, but not anymore. Learning certain music theoretical concepts can be enormously enhanced by way of online learning tools. Even various aspects of creative work are becoming available by way of software designed for specific types of music for people with specific levels of experience. I shall present one of my own projects briefly in the next section below.

Similarly, our ability to make music online will continue to increase in terms of numbers of people involved and types of music making available. Although those two words 'quality' and 'latency' still haunt some forms of networked performance, there is no looking back. This means that where an individual cannot find people with whom to make music locally, he or she can always look for others online within a well-defined musical area.

Hierarchies are also being redefined in our culture in which copyleft is playing an increasing role and where remix culture offers means by which authorship is becoming more dynamic. Both of the above involve sharing; sharing involves communication and communication involves aesthetics. This is why I am so optimistic that a large-scale rebalancing of musical activity is taking place due to the increasing role of the Internet in music.

As our early twenty-first-century revolutions are taking place, our traditional forms of presentation of music, that is, our rituals, are changing. Old means of presentation as well as (technology-based) new ones are developing constantly. Once music has been made, its future life in terms of dissemination is being facilitated through a variety of online channels. Music educators, although many may be uncomfortable with a number of types of music, need

not become virtuosi in these types of music, as more and more pedagogical tools are made available to their students online. It is therefore important to have online educational nodes where information is on offer concerning where one can find portals, software, Internet music hubs and so on. This aids educators in terms of facilitating their students' interests without having to be fully up to date across a wide variety of music genres. e-Learning has allowed the teacher to introduce and the student to follow his or her own path. Fear not: the school choir, orchestra and pop bands need not fret, as the live experience is irreplaceable and not under any threat. Nonetheless, alongside this we have a wide variety of digital instruments and controllers, many not difficult to learn, on offer for contemporary music making. In short, music is simply more diverse, and its means of production and appreciation are very much supported through technology. Education is in an excellent position to reflect this.

MY TWO PENNIES' WORTH

In my personal voyage in which I have been attempting to take accessible innovative forms of music out of the margins and introduce them to more 'optimal' communities of interest, I have discovered that this can best be achieved by introducing musical diversity to the young, including innovative types of music that they may enjoy. This means that the pieces need to make connections with their (aural) lived experience. I have attempted to better understand this phenomenon by way of making my music open to different sections of the public (the 'for whom'), sometimes making works flexible to specifically address a particular audience. As a researcher, I have published on marginalized music over a couple of decades (e.g. Landy 1991) and introduced the notion of the 'something to hold on to' factor in timbral/electroacoustic composition (Landy 1994). I have led the intention/reception project (see, e.g. Landy 2006; Weale 2006) in which the research team discovered how accessible certain types of electroacoustic music can be in terms of a broader public as well as in terms of young people These are highly relevant discoveries in terms of this position paper's aim.

The ElectroAcoustic Resource Site (EARS; www.ears.dmu.ac.uk) was the first step in providing interested people with information that could aid their understanding of terminology and their scholarly investigations. Clearly it is mainly students, amateurs and professionals who consult EARS; its dynamic content comes from the same community. Its successor, introduced briefly in the first issue of this journal (Landy 2007), EARS II, which is now being implemented in 2012, takes a major step forward. The goal is to offer teacher-led as well as individual-led learning in the area of sound-based music studies. Its target group is 11–14-year-olds, although successful tests with school groups of age 9 upwards have been carried out. EARS II will introduce concepts, repertoire and creative applications holistically. Its creative software program, the Sound Organiser, will be available in mid-2012 thanks to support from the European Union. The EARS II site will have a companion publication that I have written that will also be published in 2012, entitled *Making Music with Sounds* (Routledge). Teachers, students and interested people of all backgrounds will be able to discover the art of sound organization using technology through the combination of EARS II (which will be presented in several languages by 2013) and the Sound Organiser. Remixers and others in the community of sound-based music will be offered a focal point at the Sound Organiser's web hub where pieces, mixes, remixes and social networking will all take place.

CONCLUSION

In a short position paper like this one, only a *capita selecta* of subjects can appear. Hopefully the ingredients that I have put into this cocktail have been mixed well. My goal has been to focus on how technology can enhance the development of communities of interest, including in the most innovative forms of music making. Music education can neither ignore these developments nor combat them. Instead, music education can take a leading role in supporting both music learning and music making using these exciting technological platforms that are there to support our music, not dictate it.

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