

Jeffrey Martin

**Electroacoustic music in middle and secondary education:
Some concerns regarding curriculum development**

Beijing, China

jeff_martin@tricolour.queensu.ca

Abstract

The current importance attached to information and communication technology (ICT) in education and the wider availability of freeware music applications have increased the opportunities for student engagement in electroacoustic music. Still, research indicates that most music teachers use ICT as tools merely to facilitate working in traditional composing contexts (such as score writing or MIDI keyboard sequencing) rather than to explore diverse electroacoustic practices. Also, when the focus is sound exploration, rather than pitch and rhythm entry, the learning activities are rarely linked contextually to those traditions.

Fortunately, responses to this problem are emerging in the efforts of a few individuals and organizations to connect the technology-based composing done in schools with the authentic practices of electroacoustic composers. However, despite these valuable initiatives, it remains unclear what constitutes an effective curriculum. In this paper, I raise and explore concerns regarding electroacoustic music curriculum development, for middle to secondary school, against the background of recent advances in curriculum and music education philosophy, as well as my own teaching experiences. I argue that the success of such a curriculum is dependent on the perspective of music, electroacoustic music and education that informs its aims, activities and learning outcomes. Without critical attention to these foundational issues, teaching runs the risk of adopting an influential, but erroneous, conception of music and teaching that abstracts electroacoustic from the lived experiences and meaning-making of students, even when active music making is the focus of the lesson. Conversely, a curriculum that enables meaningful participation with the living and transforming traditions of electroacoustic music may help to prevent the further alienation of an already marginalized art form.

1. Introduction

The current wide availability of recording, editing and sound synthesis technology has made it possible for many homes to be equipped for life-long engagement in electroacoustic music. Although a central goal of education is to relate what is learned in school to the real-world pursuits of students, the significance of this development is often overlooked in school music curricula. There is a need for a clear connection between the work of actual practitioners of electroacoustic music and the learning students are receiving in school.

Students in middle and early secondary education are at a phase in their development where the connections between school learning and real-life application are of central importance; the potential exists that, if the school learning is viewed as meaningful to their daily lives, students will remain interested in that particular learning well beyond the school years. The focus of this paper, then, is on foundational issues regarding electroacoustic music curriculum development – particularly those features that can ensure the highest levels of engagement and transfer of learning for students in this age group – rather than a prescriptive account of specific content and learning activities. Not only do foundational concerns precede any discussion of curriculum content, but also, it is unlikely that any

prescriptive recommendations could be applicable in all given situations. The paper begins with a look at the current situation with electroacoustic music in the majority of schools, including the problems and recent possibilities, and then examines this issue of curriculum foundations against recent developments in music education philosophy and the needs of early adolescent students. The concluding discussion attempts to apply resulting insights to the development of electroacoustic music curricula in schools.

2. The current situation and the need for authentic learning of electroacoustic music

2.1 Problems

In the context of school music curricula, electroacoustic music is normally framed within the educational application of information and communication technology (ICT). It is no surprise, therefore, that many regard active engagement in technology-based music making as a supplementary, rather than essential, component of the music curriculum. However, according to a survey completed by the UK Office for Standards in Education (OFSTED) in 2004, schools were widely and positively adopting ICT in music teaching:

ICT has had a positive impact on teaching and learning in music in the majority of secondary schools. Music technology is often used successfully to enhance the development of a wide range of musical skills, as well as being an area of study in its own right. (Ofsted 2004, p. 4)

Unfortunately, despite this encouraging overall observation, the study also noted that teachers typically limit the potential use of technology in music learning:

Most music departments base the majority of work in music technology on one piece of software – typically either sequencing or score-writing. This can result in pupils gaining limited experience in the wide-ranging applications of ICT in music. (Ofsted 2004, p. 4)

Teaching, then, more often involves using technology to facilitate working in traditional composing contexts (such as score writing or MIDI keyboard entry) rather than to engage in the kinds of practices common to electroacoustic composers (Savage and Challis, 2002; Pitts, 2006). While this situation may be the result of teachers' inexperience and general discomfort with some of the new equipment and techniques, it is doubtless also the perspective that conceives technology's role solely in relation to a traditional music curriculum. Interviews with a number of teachers conducted by Harrison et. al. revealed a common view of ICT as mere "tools" with limited application (Harrison et. al., 2002, p. 43).

For Savage and Challis (2002), teachers rarely involve students in situations where the technology is central to the music making, preferring instead to focus on notation-based sequencing. They view this emphasis on MIDI tools as "unhealthy", as it presents a narrow conception of electroacoustic music as "synonymous with keyboards linked to sequencing software", and restricted to "the controlling of pitch and time parameters" (Savage and Challis 2002, pp. 2-3).

Nor is it necessarily encouraging when music making outside the pitch-duration language is conceived as a kind of preliminary, novice stage, suitable for children and beginners. Many in the music education field still view composition based on sounds as separable from "serious" composition with notes. In this excerpt from the literature on creative thinking and composition, the established practice of soundscape composition is misconstrued as an exploratory form of composing with "sound effects":

At [the] beginning stage, students can find immediate success... by creating soundscape compositions (compositions that combine sounds to create an "effect") and compositions using found sounds. (Hickey, 2003, p. 48)

2.2 New initiatives

Fortunately, there have recently been a growing number of efforts, by both individuals and organizations, to shift the learning focus from technology to electroacoustic music and to bring students into contact with its authentic (i.e., “real-world”) practices. Collaborations between music education specialist Jon Savage and composer Mike Challis have students complete projects under the guidance of a practising electroacoustic composer. One such project was *Dunwich Revisited* (Savage and Challis, 2001), in which students aged 11-14 worked together on a piece combining vocal, instrumental, environmental and processed sounds.

The “Sonic Postcards” project, initiated and supported by the Sonic Arts Network (www.sonicpostcards.org), focuses on soundscape composition. Students aged 9-14 engage in creating short pieces comprising recordings they make of their school’s local environment. The resultant “postcards” in mp3 format are then exchanged with those created in a school situated in an entirely different location. In the process of producing their pieces, students learn the recording and editing techniques, as well as the sensitivity to the sonic environment shared by soundscape composers.

A more recent development involves the use of interactive websites to introduce school students to electroacoustic music. “Organising Sounds”, a website created by teacher and researcher Anna-Marie Higgins (www.organisingsounds.com), contextualizes student composing activities within the electroacoustic practices of *musique concrète* and soundscape composition. In addition to including resources for university undergraduates and the general public, the Electroacoustic Resource Site’s planned pedagogical site (EARS II) proposes to provide an interactive learning environment for students aged 11-14. In contrast to the previous projects, EARS II intends to offer a curriculum suitable for use in conjunction with school music programs that brings together conceptual learning, listening and music making components (Landy, 2009; Wolf, 2008).

Despite these encouraging programs, there is still a need to address foundational issues regarding curriculum development; namely, those essentials required to ensure that such initiatives would result in quality learning and life-long engagement in electroacoustic music. Prior to introducing any learning activities or other content, an effective curriculum needs to clearly address two basic issues: 1) our understanding of ‘music’, and ‘electroacoustic music’ in particular, and, 2) its value in general education, i.e., how it serves the needs of a diverse population of learners and why, therefore, it should be taught. The temptation is to rely on our own enthusiasm for electroacoustic music to guide curriculum decision-making. However, the way in which one conceives these two issues has a direct bearing on what students learn, how motivated they are and how they far they achieve the learning outcomes.

3. Exploring the foundations of a music curriculum

What is (electroacoustic) music? What is the value of (electroacoustic) music for life? In music education answers to these fundamental questions are normally framed within one of two competing paradigms, which despite developments and variants, present a contrasting set of basic assumptions. In the literature on music education philosophy these general perspectives of music and its value are labeled: ‘Aesthetic’ and ‘Praxial’. The following discussion provides a critical introduction to these two paradigms, showing how a widespread conception of music and music education founded on Romantic idealism is giving way to a perspective that reflects more recent thinking. This paradigm shift holds promise for electroacoustic curriculum development and will, therefore, be discussed at some length.

3.1 Praxial vs. aesthetic paradigms: a shift in music education foundations

3.1.1 The aesthetic paradigm

The ‘aesthetic’ paradigm has been a guiding force in music education since the middle of the twentieth century (McCarthy and Goble, 2005), however its roots go back to the late eighteenth and early nineteenth centuries. It still manages to be influential despite the more recent emergence of a ‘praxial’ paradigm, and that influence continues to inform much music curriculum development – mostly unconsciously. ‘Aesthetic’ here refers not to philosophy of art, but to the idealist theoretical framework that developed during that time. In this conception, the goal of artistic activity was to produce objects of disinterested, non-functional perception and appreciation; experiencing a work with the intended “aesthetic attitude” was to perceive that work for its own sake, as comprising intrinsic qualities that transcend all times, purposes, social contexts.

Numerous scholars – e.g., Wolff (1987), Goehr (1992) and Eagleton (1990), among others – contend that this perspective was born out of the decline of the patronage system in the late eighteenth century, and the subsequent emergence of the Romantic notion of the independent, self-expressive composer. The artist’s new identity was supported by the then current idealist philosophy, which viewed ultimate reality as unbound by matter, history and society, and art – considered the work of inspired genius – as an appropriate vehicle to this reality. Although few today would hold uncritically to the tenets of Romantic idealism, it is the philosophical foundation of the prevalent notion of “classical music” and, by extension, Western art music up to the present day. I have argued elsewhere (Martin, 2010) that this continues (at least subliminally) to be the popular framework for understanding ‘composition’ and ‘composer’, despite the continuing growth of alternative perspectives.

3.1.2 The aesthetic paradigm in music education

An important consequence of the aesthetic perspective is that the focus of music becomes the contemplation of works. Separated from function, activity and other aspects of context, music becomes a collection of artifacts existing only for the values associated with “fine art”, i.e., abstract forms of human feeling (Langer, 1953), or “tonally moving forms” (Hanslick, 1986, p. 29). Since the meaning of works is understood to inhere entirely in their sounds, without any external references, the appreciation of good examples of works becomes central to the purpose of education.

Reimer (1988) provided the chief philosophical formulation of the aesthetic paradigm in music education, summarizing and furthering views developed by Leonard and House (1959), Schwadron (1967) and others. Central to his view is a notion of music as comprising “aesthetic or expressive elements”, which are “rhythm, melody, harmony, tone colour, texture and form” (Reimer, 1988, p. 52). Musical learning, then, regardless of whether it involves making or listening, is geared to developing an understanding of these supposedly inherent features of musical works.

While curricula tied to this perspective are not necessarily focused solely on works of the European classical “canon”, their aim is uniformly the appreciation of various musics as objects, or exemplars of supposedly universal concepts of music which are inherent to the works, and which transcend time, place and culture; there is a common tendency to value examples considered of “universal” value and, by extension, a view that students should learn works considered as exemplary products of our (Western) culture whether they value the music (or the “fine art” model of presentation) or not. Also, while performance and other music making is not necessarily excluded from such curricula, the subliminal, uncritical acceptance of idealist thinking places student responsiveness to works and their abstract “essences” over and above the development of practical musicianship.

This conception of the goals of learning gains support from another development from the 1960s: the “structure-of-the-disciplines”, or “discipline-based”, conception of curriculum. Regelski (2005) summarizes the implications for art education:

The movement known as discipline-based music education... presents and teaches music as a formal discipline of study. In such programs, hands-on production or performances are downplayed in deference to a theoretical... approach to musical perception that focuses on connoisseurship, conceived largely as a form of music criticism and good taste. (Regelski, 2005, p. 224)

The idealist preference for abstract conceptualization over bodily sensation can be seen even in “newer” curriculum developments, such as the UK Key Stage 3’s mandate to stress active music making. For example, a lesson on riff-based popular music would have students performing in order to gain declarative knowledge of the concept ‘riffs’, rather than learning riffs in order to develop their procedural knowledge of performing.

In summary, then, the aesthetic paradigm responds to the central questions concerning curriculum, as outlined above, in this way: 1) Music is a collection of art objects whose meaning inheres in their formal attributes and which are to be appreciated for their own sakes, detached from all purposes, functions and other contextual features; 2) The value of music is to contemplate and appreciate the strictly musical-formal (aesthetic) features expressed in the best examples of musical works. Education in this view, then, is aimed at developing the sensitivity to appreciate musical works, not the capacity to make music. Many curricula and teaching practices are based on assumptions derived from the aesthetic paradigm without being consciously aware of its origins and implications. However, despite its influence, this perspective fails to sufficiently interest students in music beyond the classroom, for reasons discussed below, and if the goal is to inspire a lasting appreciation for electroacoustic music, there is a need to look to alternative perspectives.

3.1.3 The praxial turn

A more recent framework for questions concerning music and music education involves a critique of the assumptions summarized above. Here the emphasis shifts from musical objects with intrinsic meanings to the music making that produces those objects from within contexts that includes social, cultural and personal meanings, and purposes. This decisive turn in music education theory has spawned fruitful ongoing developments and debates focused on creating a more effective approach to music learning.

While the aesthetic paradigm traces its origins to late eighteenth and early nineteenth century idealism, the praxial perspective owes its development to more recent currents, such as sociology of art, situated cognition and pragmatism. Originating from Aristotle’s term ‘praxis’ – whose meaning some would argue has been misappropriated (Balaban, 1990) – ‘praxial’ in music education was first used by Alperson (1991) to describe a way of conceiving music, and music education, that contrasts with the universalism of the aesthetic perspective. In Alperson’s praxial view, “[t]he attempt is made rather to understand art in terms of the variety of meaning and values evidenced in actual practice in particular cultures” (Alperson, 1991, p. 233). ‘Praxis’ thus refers to musical actions (as opposed to just works) occurring within the intentions of specific social and personal contexts (rather than for all times and places).

Elliott (1995) developed from this notion the first complete statement of the praxial paradigm, in which he replaced the emphasis on musical *works* with that of musical *practices*. In contrast to the autonomous, universal artwork, musical practices are dependent on specific contexts surrounding their intentional production:

*MUSIC is a diverse human practice. Worldwide, there are many musical practices or “Musics”. Each musical practice pivots on the shared understandings and efforts of musicians who are practitioners (amateur or professional) of that practice. As a result, each musical practice produces music in the sense of specific kinds of musical products, musical works, or listenables. These products are identifiable as the outcomes of particular musical practices because they *evince* (manifest, or demonstrate) the shared principles and standards of the musical practitioners who make them. (Elliott, 1995, pp. 43-44, italics in the original)*

For Elliott (1995), musical knowledge is not the abstract formal features of musical works; rather – and developing from notions such as “reflective practice” (Schön, 1983) and embodied cognition (e.g., Johnson, 1987) – it is conceived as the result of engaging in the practices of music, which are themselves situated in authentic contexts. Given the primacy of practice, Elliott’s account views musical knowledge as comprising both the procedural (knowing how) and declarative (knowing that), with procedural knowledge considered the principal type (Elliott, 1995, p. 53).

3.1.4 The praxial paradigm in music education

In a praxial perspective, music is understood as something people do and, therefore, music making (performing, improvising, composing and arranging) is the goal of music education, not just the means to attain it. In contrast to ill-defined concepts of aesthetic experience, the praxial perspective organizes the curriculum around music making actions, which, far from being technical skill training, games or contrived activities, are taught in the context of real-life models of music making. As such, the curriculum is conceived as a “practicum” which presents “rich and challenging music-making projects in classroom situations that are deliberately organized as close parallels to true musical practices” (Elliott, 1995, p. 261). However, this is not to suggest that the purpose is solely the training of future professionals:

The music curriculum-as-practicum is meant to *approximate* authentic music cultures. It does not attempt to duplicate real-world practices, because the aim of music education is not to educate all students for careers as professional musicians. (Elliott, 1995, p. 270, italics in the original)

Other scholars, notably Regelski (2004; 2005; 2009) and Bowman (2003; 2005), have developed further Elliott’s original praxial framework. In particular, Regelski has added to the centrality and situated nature of music making an emphasis on the multiplicity of social and personal use-values that human beings attribute to musical activity in daily life, whether performing or listening:

[M]usic’s most prevalent value throughout the world is its pragmatic use for a variety of personal and social values and pleasures. ... “Good music”, in such a praxial theory, then, is determined by the “goods” served by music, whether those involve amateur and recreational performance, dancing, worship, going to concerts, and the like. (Regelski, 2004, p. 6)

Thus, “good music” is not that which exemplifies the expression of inherent formal attributes, but that which best suits the specific social and personal purposes occasioning its particular use. Regelski goes on to note that “the lofty contemplative interest of expert connoisseurs” is only one of many such uses, despite its traditional dominance in music curricula (Regelski, 2004, p. 6).

The emphasis on the pragmatic value of music carries the further implication that musical meaning is not inherent in the sounds, as the aesthetic perspective holds, but is determined in a large part by the context in which those sounds are produced:

A Bach chorale *as worship* is considerably different “music”... than the same score performed by a trained chorus for a secular concert audience. What “good music” is and what a “good performance” is will vary, then, according to situated variables. (Regelski, 2004, p. 22, italics in the original)

In its learning activities, then, a praxial curriculum seeks to reflect a view of music as valuable not merely for itself, but for everyday life:

Music is a “living” art form meant for people whose lives are made more “lively” or full of life as a result. It is important to model, therefore, that musical meaning is not unchanging; rather, its value is seen in the wide range of human needs it continues to serve. Emphasizing these contemporary needs or uses is of key importance beginning with preadolescence. (Regelski, 2004, pp. 22-23)

In summary, the perspective outlined here contrasts with the aesthetic paradigm mainly by understanding music from within the mundane and multiply constructed world of human existence – in which musical practices embody a veritable web of cultural, political, economic, and other contextual attributes – rather than from a separate, ideal realm of universals. A praxial response to the

questions of music and its value, then, would be as follows: 1) Music is a human activity whose practices are situated in specific socio-cultural contexts that include the practitioners, products, audiences and purposes; 2) The value of music is to be found in the diverse ways it serves human needs, which are themselves relative to particular situations. The praxial critique of the dominant aesthetic perspective creates a needed awareness of the widespread tendency to unconsciously adopt tenets of Romantic idealism in curriculum and instruction. However, replacing the traditional paradigm with a more current sociologically informed framework is not alone enough to provide a foundation for an effective music curriculum. Rather, the test of any curriculum paradigm is ultimately how it best addresses the needs of students, which is the ultimate goal of education. The next section situates praxial notions within the developmental and educational context of middle and early secondary students.

4. Authentic learning and the needs of middle and secondary schools students

Designing curriculum based on a praxial perspective – which itself is a self-critical and evolving framework – is a more effective option for engaging students in music learning for a number of reasons. First, a focus on music making rather than concepts makes it more accessible to early adolescents in their current phase of development; although abstract thinking does come to the fore (in varying degrees) during early adolescence, students rarely show interest in learning concepts and prefer situations in which they are engaged in activity. As Lounsbury (2000) observes, adolescent students “learn best through interaction and activity rather than by listening” (Lounsbury, 2000, section 5).

Challenging, problem-based learning situations are most appropriate for students of this age group. However, activities need not – and should not – be restricted to *problem solving*, where the object is to find *the* solution to a clearly stated problem. Electroacoustic music composition tasks provide the opportunity for working with ill-defined tasks that encourage *problem finding*, in which students work in response to their own discovered problems (Getzels and Csikszentmihalyi, 1976).

Second, teaching based on authentic music making practices ensures an on-task and productive learning situation. Research indicates that young adolescents are characteristically drawn to real-life experiences and corresponding learning situations that are authentic (Caskey and Anfar, 2007). As Crawford (2007) notes, “In authentic learning experiences, adolescents are motivated and self-directed, and they gain a better understanding of the broader ideas of the discipline” (Crawford, 2007, p. 138). By contrast, students are less motivated when music is presented as a school subject, comprising activities geared to understanding and appreciating, for instance, “the elements of music”. Studies reveal that school subjects, experienced as such, are valued increasingly less throughout the school years, and the decline is most apparent in the transition to middle school (Wigfield, et. al., 1991), coupled with a drop in intrinsic motivation (Gottfried, Fleming, and Gottfried, 2001). The more a music class is driven by the need to “cover” content separated from the students’ everyday lived experience, whether through listening or through activities and games designed in relation to abstract concepts, the less likely it is to motivate, and, worse, it may even discourage them from lifelong engagement in music. Conversely, the closer a music class approximates an adolescent’s personally- and socially-experienced world, the more likely will be his or her enthusiasm for learning.

Finally, students respond most positively to those activities that are directly linked to their emerging conception of ‘self’, which includes issues of personal identity, self-esteem and social identity; Harter (1990) notes that adolescents’ self-esteem is highest when they are able to show competence in areas of importance to them, and when they have positive social relations. Musical activities done in groups are not enough; these must be perceived as meaningful to the students themselves. This is best achieved when students identify with musical activity as an authentic activity, not just a classroom

exercise, and is something they can do well through meeting challenges, thereby feeling rewarded by the thought that “I can do this!” Pre-and early adolescence is an opportune time to ensure that making music (with competence and enjoyment) becomes central to a student’s sense of personal identity, thereby preparing and motivating lifelong engagement in music (Regelski, 2004, p. 38).

Relocating the focus from concepts and works to musical practices, then, allows a direct correspondence between learning objectives and the developmental needs of the students. Moreover, the result of modeling and engaging students in meaningful, authentic musical challenges will be an active interest in music that will continue beyond the school years.

5. Implications for electroacoustic music curriculum development

The remainder of this paper examines implications suggested by the above discussion for the design of effective electroacoustic music curricula for middle and secondary school students. Again, these are guidelines rather than prescriptions:

1. The focus of learning should be electroacoustic practices, not concepts

On the basis of the above discussion, efforts like “Sonic Postcards”, “Organising Sounds” and the proposed “Sound Organiser” component of the EARS pedagogical site, are steps in the right direction. However, there is still a danger that such endeavours become isolated projects or means-end activities in the service of a curriculum geared toward concepts or music appreciation. Students will focus on the music making activities themselves, not on concepts extraneous to them, and thus it is important that the music making embody the procedural knowledge students are expected to learn, with the conceptual knowledge provided in support of that learning. Put more clearly: in this view, conceptual learning is used to facilitate learning how to make electroacoustic music, as opposed to using music making activities to facilitate learning concepts. For example, if soundscape composition is the focus of the learning, the outcome will be a student work, which, throughout the process, has been enabled by concepts of the sonic environment and acoustic ecology, examples from the works of, e.g., Barry Truax and Hildegard Westerkamp, and the teacher’s (informed) supervisory support of how “the environmental context ... is preserved, enhanced and exploited by the [soundscape] composer” (Truax, 1984, p. 207). The focus on music making, then, is not simply an emphasis on “learning activities”. Intentional acts of music making include both procedural and conceptual knowledge in the challenge of creating an electroacoustic piece. Also, while it is possible to gain some musical understanding without this experience, music making affords further insights that can inform the appreciation of music (Elliott, 1995, p. 57).

2. Teaching and learning should be situated in the contexts of authentic electroacoustic music traditions

If one accepts that musical practices are context-dependent, it follows that the curriculum focus on a reasonable approximation of the approaches to electroacoustic music practised by communities in the real world. These traditions of electroacoustic practice reflect not only features of genre and style, but also methods and purposes. While it is not necessary to train students to become highly competent composers of, for example, acousmatic music, it is important that they be connected with the purposes surrounding the creation of a “cinema for the ears”, if the exercise is to become more than simply “dabbling” with recorded sounds.

However, it is equally important to note that electroacoustic traditions are not frozen in history, but rather are living and transforming. There exist efforts to introduce electroacoustic music in school that, for example, present units on “musique concrète” that fix the acousmatic tradition in the early years: pieces are constructed entirely from recorded sounds, all of which are meant to be perceived as abstracted from the original sources. This conception neglects later developments, such as the inclusion of electronically generated sounds along with recorded samples, the tendency toward

narrative approaches dependent on recognizable sound sources (McFarlane, 2001), and the hybrids that break down conventions separating “serious” from “popular” approaches (Landy, 2007).

Focusing the curriculum on electroacoustic practices contextualized by real-life models suggests that it is important for teachers to have practical, and not just cursory, experience with electroacoustic music as currently practiced. Therefore, an effective electroacoustic curriculum cannot be constructed in such a way as to be “teacher-proof” (Elliott, 1995, p. 244). To be sure, in teacher training institutions, music teachers would benefit greatly from the possibility of collaboration between departments of education and electroacoustic music.

3. There should be a balance between transmission and transformation

Students need to learn the established traditions of electroacoustic music, but in a way that is participatory and transformational, rather than aimed merely at the transmission of past culture. This is particularly important given the fact that traditions are not themselves frozen museum monuments. However, there is a tendency for some to take the transformational aspect to an extreme: in a naïve (and inaccurate) version of the constructivist approach, students learn simply by finding their own way through projects, without background knowledge or guidance. Research conducted by Higgins and Jennings (2005) revealed that students composing electroacoustic music in the context of such an approach were unable to realize their full potential. They concluded that, in order to achieve the desired learning outcomes, prior instruction in technical, stylistic and structural features of electroacoustic music composition would be required (Higgins and Jennings, 2005). Current educational thinking recommends a balanced approach to instruction that includes both teacher-directed and student-centred learning. An effective electroacoustic music curriculum will avoid the extremes of both naïve constructivism and perennialism – i.e., the insistence that learning is merely the transmission of the great “classic” works of the (Western) repertoire.

4. The specific benefits of learning electroacoustic music for students’ personal lives, lived beyond school, must be clear in both the objectives and teaching activities

This last implication is the most crucial of all: even the most creative attempt to interest students in electroacoustic music is doomed to fail if it is not seen as personally meaningful to them. An effective curriculum needs to be planned in such a way as to make the following points clear to students: 1) that the learning of electroacoustic music affords tangible gains for students in the context of their own personal and social lives; and, 2) specifically how it benefits their lives such that it be important enough for them to continue to pursue beyond the school years. The belief that electroacoustic music is an important aspect of our culture and that, therefore, students should be exposed to it, will not appeal to those who, especially at their particular phase of development, will not take seriously anything that is not personally meaningful to them. Therefore attempts to teach concepts about electroacoustic music, even through attractive games and similar activities, will ultimately fail the test of life-long music making if the exercise is merely a means-end matter. Students need to experience the satisfaction of meeting the challenges of self-directed (but teacher supervised) electroacoustic music composition. The result of task choice, ownership of the task, active decision making and problem finding will be real enjoyment, rather than momentary amusement, and the desire to have more experiences of this sort.

In conclusion, as Regelski observes: “To the degree that what is taught in school has little or not lasting, life-long *musical* impact on students or society ... it loses (or, to begin with, fails to gain) the economic and cultural support of society.” (Regelski, 2009, p. 68). The steady loss of society’s support has already been strongly felt in communities engaging in electroacoustic music. The continuing marginalization cannot be prevented simply by teaching students to appreciate representative works and styles; rather, involving them as active participants and encouraging them to pursue their own meanings and purposes within the rich electroacoustic traditions will more likely generate the life-long interest needed for a new generation of practitioners and listeners.

References

- ALPERSON Philip, "What should one expect from a philosophy of music education?", *Journal of Aesthetic Education*, 25, 3, 1991, pp. 215-42.
- BALABAN Oded, "Praxis and poesis in Aristotle's practical philosophy", *The Journal of Value Inquiry*, 24, 3, 1990, pp. 185-198.
- BOWMAN Wayne, "Re-tooling 'foundations' to address 21st century realities: Music education amidst diversity, plurality, and change", *Action for Change in Music Education*, 2, 2, 2003. Available at: http://act.maydaygroup.org/articles/Bowman2_2.pdf.
- BOWMAN Wayne, "The limits and grounds of musical praxialism", in *Praxial music education: Reflections and dialogues*, David J. Elliott (ed.), New York, Oxford, 2005, pp. 52-78.
- CASKEY Micki M., and Vincent. A. Anfara, Jr., "Research summary: Young adolescents' developmental characteristics", 2007. Available at: <http://www.nmsa.org/Research/ResearchSummaries/DevelopmentalCharacteristics/tabid/1414/Default.aspx>.
- CRAWFORD Glenda B., *Brain-based teaching with adolescent learning in mind*, Thousand Oaks (CA), Corwin Press, 2007.
- EAGLETON Terry, *The ideology of the aesthetic*, Malden (MA), Blackwell, 1990.
- ELLIOTT David J., *Music matters: A new philosophy of music education*, New York, Oxford University Press, 1995.
- GETZELS Jacob W., and Csikszentmihalyi, Mihaly, *The creative vision: A longitudinal study of problem finding in art*, New York, Wiley, 1976.
- GOEHR Lydia, *The imaginary museum of musical works: An essay in the philosophy of music*, Oxford, Clarendon Press, 1992.
- GOTTFRIED Adele E., James S. FLEMING and Allen W. GOTTFRIED, "Continuity of academic intrinsic motivation from childhood through late adolescence: A longitudinal study", *Journal of Educational Psychology*, 93, 2001, pp. 3-13.
- HANSLICK Eduard, *On the musically beautiful: A contribution towards the revision of the aesthetics of music*, G. Payzant (trans. and ed.), Indianapolis (IN), Hackett Publishing Co., 1986.
- HARRISON Colin, Chris COMBER, Tony FISHER, Kaye HAW, Cathy LEWIN, Eric LUNZER, Angela MCFARLANE, Di MAVERS, Peter SCRIMSHAW, Bridget SOMEKH, and Rob WATLING, *ImpaCT2: The impact of information and communication technologies on pupil learning and attainment*, British Educational Communications and Technology Agency (BECTA), 2002.
- HARTER Susan, "Causes, correlates and the functional role of global self-worth: A life-span perspective", in *Perceptions of competence and incompetence across the life-span*, John Kolligian Jr. and Robert J. Sternberg (eds.), New Haven (CT), Yale University Press, 1990, pp. 67-98.
- HICKEY Maud, "Creative thinking in the context of music education", in *Why and how to teach music composition*, Maud Hickey (ed.), Reston (VA), MENC, 2003, pp. 31-53.
- HIGGINS Anna-Marie, and Kevin JENNINGS, "The music of sound: a constructivist approach to the comprehension of electroacoustic music, through the composition of musique concrète, at post-primary school level." in *Recent Research Developments in Learning Technologies* (Proceedings of the Third International Conference on Multimedia and Information and Communication Technologies in Education, June 7-10, 2005), A. Méndez-Vilas, B. González-Pereira, J. Mesa González and J.A. Mesa González (eds.), Badajoz, Spain, FORMATEX, 2005.

Jeffrey Martin - Electroacoustic music in middle and secondary education: Some concerns regarding curriculum development

JOHNSON Mark, *The body in the mind: The bodily basis of meaning, imagination, and reason*. Chicago (IL), University of Chicago Press, 1987.

LANDY Leigh, *Understanding the art of sound organization*, Cambridge (MA), MIT Press, 2007.

LANDY Leigh, "Increasing access to sound-based music – www. eEMS", *Proceedings of the 6th EMS Conference, June 22-25, 2009*, Buenos Aires, Argentina. Available at: <http://www.ems-network.org/ems09/papers/landy.pdf>.

LANGER Suzanne, *Feeling and form*, New York, Scribner, 1953.

LEONARD Charles and Robert W. HOUSE, *Foundations and principles of music education*, New York, McGraw-Hill, 1959.

LOUNSBURY John H., "Understanding and appreciating the wonder years", National Middle School Association (www.nmsa.org), 2000. Available at: <http://www.nmsa.org/moya/PlanYourCelebration/PRResources/WonderYears/tabid/1198/Default.aspx>

MARTIN Jeffrey, "Re-examining music composition: Toward a diversity of perspectives", *Proceedings of the 29th World Conference of the International Society for Music Education (ISME), August 1-6, 2010*, Beijing, China.

MCCARTHY Marie. and Scott GOBLE, "The praxial philosophy in historical perspective", in *Praxial music education: Reflections and dialogues*, David J. Elliott (ed.), New York, Oxford, 2005, pp. 19-51.

MCFARLANE, Matthew, "The development of acousmatics in Montréal", *eContact!* 6, 2, 2001. Available at: <http://cec.concordia.ca/econtact/Quebec/McFarlane.html>.

Office for Standards in Education (OFSTED), "*ICT in schools 2004: the impact of government initiatives – secondary music*", London, OFSTED, 2004.

PITTS Adrian, "The use of ICT in music composing", 2006. Available at: <http://www.standards.dcsf.co.uk/ntrp/lib/pdf/ictmusic.pdf>.

REGELSKI Thomas, *Teaching music in grades 4-8: A musicianship approach*, New York, Oxford University Press, 2004.

REGELSKI Thomas, "Implications of aesthetic versus praxial philosophies", in *Praxial music education: Reflections and dialogues*, David J. Elliott (ed.), New York, Oxford, 2005, pp. 219-248.

REGELSKI Thomas, "Curriculum reform: Reclaiming 'music' as social praxis", *Action, Criticism, and Theory for Music Education*, 8, 1, 2009, pp. 66-84. Available at : http://act.maydaygroup.org/articles/Regelski8_1.pdf.

REIMER Bennett, *A philosophy of music education*, Englewood Cliffs (NJ), Prentice Hall, 1988.

SAVAGE Jon and Mike CHALLIS, "Dunwich revisited: Collaborative composition and performance with new technologies", *British Journal of Music Education*, 18, 2, 2001, pp. 139-149.

SAVAGE Jon and Mike CHALLIS, "Electroacoustic composition: Practical models of composition with new technologies", *Sonic Arts Network Journal of Electroacoustic Music*, 14, 2002, pp. 8-13.

SCHÖN Donald, *The reflective practitioner: How professionals think in action*, New York, Basic Books, 1983.

SCHWADRON Abraham, *Aesthetics: Dimensions for music education*, Washington (DC), MENC, 1967.

TRUAX Barry, *Acoustic communication*, Norwood (NJ), Ablex, 1984.

Jeffrey Martin - Electroacoustic music in middle and secondary education: Some concerns regarding curriculum development

WIGFIELD Allan, Jacquelynne S. ECCLES, Douglas MACIVER, David A. REUMAN, and Carol MIDGLEY, "Transitions at early adolescence: Changes in children's domain-specific self-perceptions and general self-esteem across the transition to junior high school", *Developmental Psychology*, 27, 1991, pp. 552-565.

WOLF Motje, "EARS II: Time for a new approach to electroacoustic music", in *Proceedings of the First International Conference of Students of Systematic Musicology (SysMus08)*, M. M. Marin, M. Knoche, and R. Parncutt (eds.), Graz, Austria, 2008.

WOLFF Janet, "The ideology of autonomous art", in *Music and society: The politics of composition, performance and reception*, Richard Leppert and Susan McClary (eds.), Cambridge (MA), Cambridge University Press, 1987, pp. 1-12.