

Composing with *Hyperscore* in general music classes: An exploratory study

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This paper presents the first report of an exploratory study involving the use of the software *Hyperscore* in general music classes as a mean to facilitate musical understanding and conceptual transferability from a technology mediated music learning context to the normal music classroom setting. It was developed in one school in three classes of 26 children each, 10 to 13 years old, in the context of pre-service music teacher training under the supervision of the Department of Music Education of the Porto College of Education. Between December 2006 and May 2007, the three classes were involved in music education both in a room provided with one computer with headphones for each child and the software *Hyperscore*, and in the normal music classroom environment. Using mainly a qualitative, exploratory, and participant research methodology, data collected involved children's files and evaluation sheets, teachers' written observations, and interviews. Preliminary findings reveal high levels of task centered behavior, autonomy, and collaborative attitudes, as well as a more conscious use of musical vocabulary. Given the strong appeal of the graphical composition system, further studies are needed in order to establish a clear link between the child's musical intentions and the pictographic outcomes.

Keywords: composition; technology; transferability; motivation; autonomy

While in the last decades there has been a growing interest in the use of information and communication technologies (ICT) in music classes, the number and conceptual scope of detailed research, including the use of ICT in

classroom-based music education, are rare. The body of literature in this area outlines, on the one hand, the implications of music technology for curriculum development (Hunt and Ross 1997, Rogers 1997, Savage and Challis 2002, Cain 2004, Finney and Burnard 2007, Brown 2007), and on the other, the fundamental relationship between ICT and the activity of composing in the classroom (Dalgarno 1997, Savage and Challis 2001, Savage 2005). As a good endeavor toward an informed reflection on this matter, the *British Journal of Music Education* dedicated in 1997 an entire issue to the use of technology in music education. In its opening editorial, John Paynter wrote (1997, p. 108):

We are reminded frequently that IT is a *means* not an end, supporting “the quest for genuinely musical activities....” It offers “opportunities to explore different timbres” and to create “individual interpretations” of music.... These are the thoughts to keep in mind.... Used imaginatively—and, it is to be hoped, free of the unhelpful jargon—this is not IT for IT’s sake but rather “technology *in the service of music*” [original italics].

Paynter’s great concern that the use of ICT in music education could ignore that music exists in the direct relationship with its production (its instruments, literature, notation systems) makes real sense as the danger exists that ICT comes into the music education classroom without a previous conceptual grasp of its true potential as a mean of challenging “the very nature of music itself at a fundamental level” (Savage 2005). It is also in the very specific domains of composing and performing as musical *activities* that we are concerned to situate this study, placing music as a curriculum subject where ICT cannot be envisioned as an end in itself but as a mean to set free imagination and creativity (Paynter 2000).

Most recently, composers and music educators (Jennings 2003, 2005, Farbood *et al.* 2004, Machover 2004) have been joining efforts and working “to bring together sophisticated and attractive new music, participatory musical activities that stimulate the creative imagination...and innovative concepts about pedagogy and healing, to lay the foundations for a new field of ‘active music’” (Machover 2004, p. 171). The result of this work is partially made concrete through the *Hyperscore* software designed as a graphical sketchpad for novice composers. The present study aims to explore the use of this particular software as a mean to facilitate musical understanding, with the objective of comprehending how music conceptual transferability from a technology mediated music learning context to the traditional music classroom setting, and vice-versa, is operated by children.

METHOD

Participants

This research study was developed in the S. Mamede de Infesta Secondary School, Porto. It involved three classes of 26 children each, 10-13 years old, in the context of pre-service music teacher training under the supervision of the Department of Music Education of the Porto College of Education.

Materials

The project took place both in the normal music room (provided with a piano, a number of Orff instruments and acoustic guitars) and in a room equipped with 28 computers where the software *Hyperscore* had been previously installed, individual headphones, a multimedia projector, and a screen. The software was designed by Mary Farbood and Egon Pazstor at the MIT lab (Cambridge, Massachusetts, USA), with the collaboration of Kevin Jennings, specifically with the intention to facilitate composition activities for beginners at all ages. It consists of a working space containing two types of “window,” which are usually referred as the “motive” window and the “sketch” window. Basically, motives, which are color coded, are made by placing notes in the motive window, which will then be placed in the main sketch window by a process of “drawing” them in with the appropriate color pen. The compositional process in this environment is based on the idea that participants arrive at a final piece of music by putting together a number of previously created motives.

Procedure

In December 2006, all children received tuition in one 90-minute experimental session with the software *Hyperscore* (*H*) in a room provided with one computer with headphones for each child. Between January and May, 2007, the three classes were involved in music education in the following ninety-minute sessions scheme: two *H*, two sessions of normal music classroom (*C*), two *H*, one *C*, four *H*, and five *C*. All sessions were designed and taught by three pre-service music teachers in the presence of the cooperating music teacher. Furthermore, there was the partial intervention of the music supervisor from the College of Education and of a music technology specialist.

The composition tasks took into account both the need to explore freely the software and make the children acquainted with its possibilities and the Portuguese music curriculum in terms of melodic, harmonic, and structural

musical development in the direct relationship with music making. Further tasks were to perform on acoustic instruments some of their *H* compositions and, conversely, transcribe a previously learned Portuguese folksong to the *H* environment.

It was assumed that a qualitative, exploratory, and participant methodology was the most appropriate for both the research context and the analysis of the data, which involved children's files, evaluation sheets during the composition process, teachers' written observations, and interviews.

RESULTS

This preliminary report is based on written observations that were gathered in four main categories of analysis: (1) attitudes and values, (2) music conceptual development, (3) contemporary music, and (4) graphical composition system.

Attitudes and values. All children, while working in the *H* environment, revealed high levels of motivation, task centered behavior, autonomy, and collaborative attitudes towards their peers.

Music conceptual development. It was observed that the use of musical vocabulary by the children, when working in the *C* environment, had been improved and seemed to reveal a greater consciousness of meanings for concepts such as melody, rhythm, and harmony. Both in the process of performing the *H* compositions in the music classroom and in transcribing the Portuguese folksong to the *H* environment, an enhanced capacity to deal with music concepts was observed.

Contemporary music. When listening to contemporary music, children showed a greater awareness and tolerance toward dissonance than should be expected at this age level.

Graphical composition system. The fact that the power of the graphical composition system appeared to be so strong in terms of its visual appeal was perceived as a major critical point. Clearly, in many observed moments children's motives were the result of a graphical/visual process rather than a reflection of musical intent (see Figure 1).

DISCUSSION

Taking into account that the study was developed in the context of a fairly high number of children in each classroom, it is noticeable the change in the field of attitudes and values when working in the *H* environment. The findings also point to an apparent musical gain in terms of conceptual development. Bearing in mind the theoretical concern previously formulated

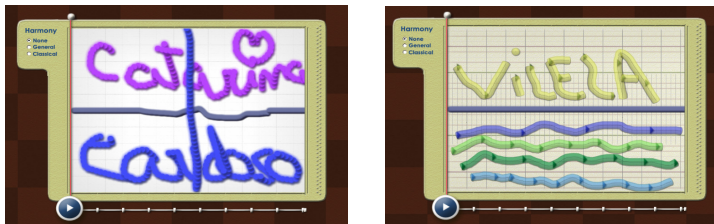


Figure 1. Two motives with children's names.

according to Paynter (1997, 2000), the child's autonomy while composing in the *C* environment, as opposed to composing in the *H* environment, deserves further attention as the domain where transferability can be observed and conceptualized. Moreover, the relationship between graphic notation in the *H* environment and conventional and non-conventional notation in the *C* environment could profit from further studies that help to establish how far the graphical system of this software acts as a vehicle for conveying the child's musical intentions.

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