

Music Technology in Irish Second Level Education – A Foobarian Approach.

by Kevin Jennings

Lets imagine a country which we will call Foobar, where reading and writing don't exist, but which despite this has managed to develop a sophisticated culture of science, the arts, philosophy and commerce. A bit of a stretch I know, but not entirely inconceivable. All cultural transmission in such a society would take place by oral means and a good memory would undoubtedly be an invaluable asset. Education would probably consist of much rote learning and place a high value on memory work. Now imagine what the impact on such a society and in particular on its education system might be when someone finally invents the pen. Well, undoubtedly a politician somewhere will pound a table and insist that we need a '*pen in every classroom*'. An education administrator will say '*no, we should have a pen room where children can go once a week to learn how to use these pens*'. So, eventually schools will all have pens and teachers will have to figure out how to make use of them. The Foobarian Department of Education will ponder the issue. They will eventually write a 'pen' curriculum and issue guidelines on how the 'pen' may be used to support memory work and rote-learning in schools.....

The computer analogy here is obvious so I won't beat you over the head with it any further. This parable is frequently used by MIT Professor Seymour Papert to illustrate a number of general points about current approaches to the use of computers and digital technology in schools. Firstly, the computer, like the pen, is simply a tool. Children in schools use pens every day, but they don't study the pens themselves and are not specifically examined in their use. The pen is simply one means to engage with the subject matter at hand. Secondly, the curriculum in schools is at least to some extent a function of the tools available to deliver it. We do lots of reading and writing in schools because pens and books, blackboard and chalk are cheap and readily available. The appearance of computers offers the possibility of doing things differently or possibly even doing different things altogether. What doesn't seem to make much sense is to try to incorporate computers into the education system in a way which does not allow for some change in either the 'what we do' or the 'how we do it'.

With this in mind, what follows is a brief description of how music technology is applied and examined at Leaving Certificate level, with some analysis and comment.

Music technology became part of the Irish curriculum as an element of the Leaving Certificate music syllabus newly introduced in 1997 and examined for the first time in 1999. Technology is referred to in the syllabus in two areas, performing and composing, but is specifically examined only as part of the performing option. Under this option, students may choose to sing, play an instrument, improvise, or demonstrate "an ability to understand and to use microtechnology music-making systems".

It is not immediately apparent from the Leaving Certificate Music Syllabus or the NCCA Guidelines for Teachers exactly what is required to successfully complete the performing/music technology option, so an investigation of what actually happens in practice is required. For the sake of simplicity, I will look at a typical case of an Ordinary

Level student and a Higher Level student, each taking music technology as a single activity music performance elective option. In each case the music technology examination completely fulfills the Leaving Certificate Music *performing* requirement .

In the music technology *performing* examination at Ordinary Level there is no actual music performing required. Students simply enter notes into a piece of music software using the mouse so as to make a two part score. They then perform three edits to the score, which may be as simple as moving a note or entering a dynamic marking, save and retrieve the file and print the score. As they enter the music into the computer, they work by copying from a pre-prepared score which they bring into the examination and may be a piece they have previously composed or an existing work by someone else.

At Higher Level, students use the mouse to enter two scores of three parts, make six edits, save the pieces and print a score. They then either perform along with a pre-prepared score or play four conventional pieces on a synthesizer or other MIDI enabled instrument.

For successfully completing this mouse-based task, Ordinary Level music students may score up to 160 marks out of a total of 400, that is to say *40% of their entire Leaving Certificate music mark*. Higher Level students may score up to 88 marks out of 400 or *22% of their entire Leaving Certificate music mark* for completing a similar if slightly longer task.

This task is little more than transcription. In the absence of a computer, an equivalent task would be to simply take a given piece of music and copy it out onto staff paper. There is no requirement that the student should engage with the musical material, understand anything about its content or even understand the meaning of the music notation symbols. There is not even any requirement to engage with any aspect of music technology other than at the most basic, trivial level.

Operating a mouse and navigating software is not a music performing activity, and is not comparable with conventional performing or singing. There are no marks awarded for the musical relevance or appropriateness of the ‘edits’ or any other musical interaction beyond an instruction in the marking scheme that “music below required standard” be marked in a lower grade band (in practice this is simply a requirement that the music being copied be sufficiently complex). Finally, it seems that the form of the examination as generally applied is in conflict with the syllabus itself, which specifically specifies “*input via electronic instruments (and/or conventional instruments with electronic controllers providing a MIDI interface)*”. It hardly seems plausible that a computer mouse might be considered to be an instrument (electronic or otherwise) for the purposes of a music performing examination.

In short, the music technology examination at Leaving Certificate level is largely trivial. It requires no engagement with music and only the most basic engagement with the technology. The level of marks awarded is completely out of proportion to the nature of the required task (an Ordinary Level maths student would have to complete four full

examination questions to achieve the same mark, requiring months of preparation both in and out of class). By accepted international standards on the deployment of technology-based resources in education, this approach can only be regarded as an example of the worst possible practice. In my view, it devalues our subject, debases us as educators and does a disservice to the students we teach.

Apart from the specific examination of music technology under the auspices of performing as described above, students taking a composing elective also have the option to use music technology resources. In this instance, their facility with the technology is not examined at all. Rather, their compositions are rated according to the usual sorts of musical criteria, regardless of the means used in their production. This seems to be a more sensible approach. Unfortunately, of the 14,980 students who took the Higher Level music programme between 1999 and 2003, only 135 (0.9%) opted for the composing elective, so there are clearly wider issues here with respect to composing in schools.

An alternative approach might be to teach and examine music technology itself in a meaningful way as part of the curriculum. One could envisage a module that might include study of the physics of sound, electro-acoustic manipulation of sound and the related software, history and analysis of electro-acoustic music, MIDI technology and related applications, recording techniques and equipment, technology-mediated composition and any of a variety of related topics. Clearly though, funding, equality of access and provision of appropriate teacher training would be issues here.

There are also a wide variety of music software available in the area of music listening and analysis. Most of these are drill-and-practice applications designed to increase aural awareness, along with some software that might be categorized as music analysis. The NCCA guidelines for teachers offer a list of some 69 suggested software packages. Unfortunately the list is out of date, some of the software is no longer available and much of it has no relevance to the demands of the Irish curriculum. The Leaving Certificate syllabus specifically mentions electro-acoustic composition as a possible option for students taking the composing elective, yet none of the standard audio editing software necessary for this work appears on the list, nor does much 'groove' software routinely used in the popular music sphere.

In any event, there is limited value in publishing an uncategorized software list in isolation. In order to successfully deploy music technology in schools in a meaningful way we need to relate it to specific requirements of the curriculum, provide dedicated funding to schools so that they may purchase the recommended software (and necessary hardware) and provide training to teachers in both its operation and appropriate methodologies for technology mediated teaching and learning. There are obviously wider issues here relating to general policy on resources and training in the areas of both music and technology in schools that fall outside the scope of this article.

There is a clear need for a fundamental re-examination of the current situation regarding music technology in our schools in the light of international best practice. A growing body of research indicates that specific types of technology, meaningfully deployed, can

be of considerable benefits to students and teachers but that successful deployment requires consideration of both context ('what we do') and methodology ('how we do it'). In fact, I believe this is where we came in. My original intention in writing an article for the JMI was to outline some internationally validated approaches and suggest how they might relate to the Irish context – a topic for a future article perhaps. In the meantime, I'm off home to some 200 year old music technology (a Thomas Perry fiddle from 1780) to engage in some aural cultural transmission.....y'know, maybe the Foobarrians were right all along!!

*A fuller version of this article may be found at the authors website;
<http://www.cs.tcd.ie/crite/projects/creative-music/publications.html>*