# Over a decade of promising pedagogical models and technology for music teaching: Can the past still reliably guide the future?

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Research papers reporting the potential of new technologies and pedagogical models have a tendency to mushroom as educators disseminate the results of promising pilot studies. Some ideas and technologies gain traction and prove sustainable while others are superseded or fall by the way side in search of the next best thing. As a first step towards examining the sustainability of new models and technology for music teaching, this concise paper compares relevant themes in a selection of current publications with those in past publications around the turn of the millennium. In so doing, this paper also considers the ASCILITE 2012 "premise that what happened in the past is no longer a reliable guide to the future."

Keywords: music technology, teaching, higher education, models

## Introduction

In spite of some early teething problems, the Internet along with advances in digital music technology has empowered teachers, producers and consumers of music in ways that were virtually unimaginable several decades ago (Lipshitz, 2005). The capability to preview and purchase music online is clearly a benefit to consumers. For musicians and students of music, especially those working at the grass roots level, modern home studio technology enables essentially 'do it yourself' production of higher quality recordings than were possible using the typical four-track analogue tape recording machines of the previous generation. In addition, the Internet can be used for accessing professional mastering studios, distribution services, and for promotion and professional networking via social media.

The unforeseen impact of such changes would seem to support the ASCILITE 2012 premise that "what happened in the past is no longer a reliable guide to the future." On the other hand, a broader historical perspective offered by Laurillard (2005) is also worth considering. Comparing new media and delivery technologies for information processing (1970s - 2000s) with their functional equivalents for reading and writing, and in turn with information and communication technologies developed throughout history, Laurillard suggests:

> "The development in information and communication technologies over the last three decades is comparable with the development in information and communication technologies over the last three millennia" (2005, p.8).

Continuing on to discuss the learning support function of recent developments, Laurillard concedes, "it is difficult to represent the importance of computer-mediated conferencing, for example, as there is really no clear historical equivalent to enabling large group discussion across huge distances (ibid)."

## Moving music education online

In the 1990s through to the early 2000s, many education research papers focused on the feasibility of online teaching and learning. Technical constraints and related concerns about equity of access were topical, as a significant proportion of the population did not own a computer with an Internet connection. The quest for appropriate pedagogical models also featured prominently as it does today.

As high-speed broadband access improved across institutions and households, the potential of streaming multimedia for instructional purposes captured the imagination of early adopter music teachers. Instructional videos of serviceable quality could now be produced and distributed via the Internet using 'plug n play' web cam technology that required little, if any, training to operate (Karlsen, 2002; Anderson & Ellis, 2002). In addition, desktop videoconferencing via web cam offered possibilities for synchronous tuition one-on-one or in small groups, although latency has continued to impose some constraints to the present day in spite of faster connections and readily accessible software such as Skype. Large room-based videoconference systems were

also being trialed by a number of universities and conservatoriums around the world (Maki, 2001; Eberle, 2003). Subsequent studies investigated how to effectively blend the use of these corporate room-based videoconference and Learning Management Systems with applications that individual teachers could use to create and distribute content with from their personal computer.

All the abovementioned technological developments were part of the Information Communications Technology (ICT) landscape by 2000, however, in practice web resources were commonly treated as supplementary rather than integral to course design (Webster, 2011). Learning Management Systems (LMS) have often been used in a similar fashion, although some teachers began to investigate the possibilities of making LMS environments more central to student learning of musical instruments through the integration of replayable media such as MIDI files, music notation files and video recordings of music teachers, students and guest lecturers demonstrating performance technique (Anderson & Fitzgerald, 2007). More recent developments in Web 2.0 social media and mobile learning applications are making it even easier for music educators to design courses with student-generated multimedia content and collaborative group work in mind. To that end, some of the earlier studies outlining instructional strategies for multimedia-assisted teaching and learning can still be useful to inform the development of new pedagogical models and practices. The same could be said of computer laptop orchestras that began around a decade ago yet foreshadowed the kind of collaborative networked music making and educational opportunities that could well be taken for granted today.

## Past assertions and models reiterated

Towards determining whether lessons learned from the previous decade can reliably inform the future, an online library catalogue search for relevant journal articles was conducted using the keywords: music technology, music teaching and higher education. Closer inspection of a sample revealed that many claims reiterated what had been said in past journal and conference publications. In table 1, the first column shows author-date referenced assertions or models proposed in recent publications; the second column shows past publications that raised the same or similar issues, models or predictions about tapping the potential of new technology.

**Table 1: Comparison of past and present assertions about tapping the potential of new technologies**

| Assertion or model in recent publication | Previous publications (similar assertion or model) |
|---|---|
| Australian Government (2005, p.v) to improve music education, and access to instrument tuition. | Commonwealth of Australia (1995) identifies need to improve quality of music education, including access to instrument tuition |
| Burnard (2011, p.201) Music educators could exploit rapid advances in IT and music technology, however, schools have found it difficult to provide equipment at a level that students are sometimes using outside school. | Savage (2002) notes opportunities for technology-enhanced and collaborative music making relative to actual take up by teachers. Brace-Govan & Clulow (2000) teachers must be prepared to reconceptualise their pedagogical approach and develop skills to enhance student learning through Internet and Web technologies. |
| Webster (2011, p. 118) Video conferencing with high-quality sound is a very promising development. | Maki (2001) Promising applications of videoconferencing for distance music teaching. Eberle (2003) videoconferencing. Karlsen (2002) e-learning. Laurillard (2005, p.8) e-learning. |
| Webster (2011, p. 118) Online communities facilitated by "expansion of social media hosting user-generated content … may effect music education outside of formal school." | Wenger (2000) Conceptual framework for understanding social learning systems in online communities of practice (COP). Waldron (2009 in Webster (2011) Online COPs help spread the knowledge of a music tradition outside of traditional boundaries. |
| Mudd (2012) "ensemble develops transferable skills in higher education music courses. Laptop ensembles … can help integrate such development into more technologically oriented music degrees." | Related benefits foreshadowed in PLOrk: The Princeton Laptop Orchestra (2005). Philippe Chatelain Laptop Orchestra founded in Tokyo 2002 cited by Huddersfield Experimental Laptop Orchestra (HELO) [Accessed online Sept. 2010]. |
| King (2009, p.175) learning technology including instructional multimedia resources and discussion boards can be a successful support tool." | Salmon (2000) e-moderating. Kearney & Treagust (2001) constructivist design … using interactive digital video to enhance learning. Ho (2004) using IT to improve music education. |
| Brader (2009, p.159) Music technology focus to improve teaching via real-time communication. | Maki (2001) distance education through synchronous (real-time) communication technologies (e.g. videoconference). |
| Leong (2011, p.233) "Our globalized world is having to … reinvent itself in the face of new capabilities of advanced technologies..." | Tapscott (1998) foreshadowed future needs of the Net Generation. Kirschner & Selinger (2003) examined the state of teacher education in regard to ICT, pedagogy and education. |
| A "pedagogical method for improvisation that goes beyond the acquisition of stylistic features and technical ability" (Monk, 2012, p.2) | Bitz (1998, pp. 21-) methods for teaching improvisation outside of jazz settings. pp. 21- 41. Theoretical models based on research into improvisational cognition (Sarath, 1996). |

## Summary

As a first step to assessing the sustainability of new models and technology for music teaching, themes in a sample of recent music education and music technology publications were compared with themes in turn of the millennium publications. Upon closer examination many of the recent publications reiterated or expanded on assertions made in the earlier publications. For example, calls for improved access to high quality music tuition were evident in a number of successive government reports. The potential of videoconferencing technology was reiterated in relation to music teaching and higher education in general. Calls for teachers to consider new ICT-enhanced pedagogical approaches were also repeated.

The expansion of social media hosting user-generated content (Webster, 2011) stands out as a disruptive yet positive change providing new opportunities for collaborative music making and learning. Efforts to ascertain the sustainability of this phenomenon, however, must surely take into account its influence on how other technologies are used. For example, in regard to laptop computer orchestras, recent advances in digital audio and mobile social media connectivity are helping to bridge practice and conceptual gaps between the traditionally specialist domain of the computer music composer and that of the music enthusiast in the broader community. Similarly, the rise of e-mastering services has empowered grass roots musicians and music students by giving them unprecedented speed of access to professional mastering studios around the world.

The notion that such developments were largely unforeseen by most bodes well for the ASCILITE 2012 premise that "what happened in the past is no longer a reliable guide to the future." However, assessing future sustainability remains - as Laurillard notes in regard to computer-mediated conferencing - "difficult to represent … as there is really no clear historical equivalent … (2008, p. 8)." Perhaps more reliably based on past history is the fact that significant advances in technology have often taken the world by storm, largely unforeseen by the masses. This view suggests there is still much to be learned from the past, especially concerning the way that people have historically learned to exploit initially disruptive technological innovations.

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