

THE USE OF DIGITAL TOOLS BY INDEPENDENT MUSIC TEACHERS

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ABSTRACT

The present paper explores two aspects of independent music teachers' views and practices: (a) their views on the importance of self-regulation and (b) how they use tools available on mobile devices to enhance their students' learning. A survey involving 1,468 Canadian teachers revealed that most teachers are comfortable using digital technology. Further, many value the use of digital tools to enhance student self-regulation. However, while some teachers embrace these technologies for music teaching, there are others who firmly resist using digital tools in music lessons. Both types of responses are explored in the present paper.

KEYWORDS

Self-regulated learning, recordings, digital music tools

1. INTRODUCTION

Millions of young people take weekly music lessons from independent music teachers. In Canada alone, it is estimated that approximately 2 million students are involved in this form of music education annually (Upitis & Smithrim, 2002). However, relatively little is known about the teachers of those students (Kennell, 2002; Montemayor, 2008). The present study begins to address this gap, focusing on one aspect of independent music teachers' practices, namely, the use of mobile devices to support music teaching and learning.

1.1 Uses of Technology to Support Music Teaching and Learning

Many independent music teachers report being isolated from their teaching peers (Feldman, 2010; Uszler, 1996). Technology has the potential to reduce isolation for both music students and their teachers by providing the means for students and teachers to interact between weekly lessons, by providing ways for independent teachers to interact with one another, by supporting music learning in general (Burnard, 2007). Further, mobile applications for music education are growing at an astonishing rate, and these resources are changing the ways people teach, learn, and make music (Rainie & Wellman, 2012; Waldron, 2013). While the use of digital tools in classroom music settings has a long history and is well described in the literature (Webster, 2012), the research on the use of digital tools in studio instruction, and especially those using mobile devices, is less prevalent (Upitis et al., 2015a).

There is a wide array of research supporting the conclusion that online electronic portfolios can support student learning in a variety of subject areas, including music (Dignath et al., 2008; Meyer et al., 2010). This is especially true when digital tools are designed to support student self-regulation (Brook & Upitis, 2015). Evidence suggests that students with higher levels of self-regulation develop superior performance skills and experience more fulfillment as musicians (Varela et al., 2016). But in order to develop the self-regulatory behaviours that are the hallmarks of skilled and expressive musicians, students need to be supported and guided as they learn to explicitly set goals and monitor and reflect on their progress. Such support may be derived through digital tools, including electronic portfolios designed specifically to enhance self-regulation. The demonstrated benefits of using online portfolios for music learning include more active involvement in music making on the part of students, as well as increased pride and enthusiasm for their music learning

(Savage, 2007). There is also evidence suggesting that by providing teachers with a virtual space to learn about digital music tools, in the form of a learning objects repository, studio teaching can be enhanced, especially in the areas of ear training and sight reading (Upitis et al., 2015b).

But do independent music teachers use these and other technologies? Based on expectancy-value theory, the likelihood of using technology effectively can be predicted by a blend of factors, including whether teachers expect that technology will be helpful and will therefore invest the time needed to learn to use the technology, possibly changing their pedagogical practices in the process (Eccles & Wigfield, 2002; Wozney et al., 2006). The present study was designed to determine the extent to which teachers value (a) student self-regulation, and (b) technology as a way of enhancing the learning of their students.

2. METHOD

The present study used self-report surveys to ascertain information about demographics, teacher beliefs, studio practices, use of technology, and professional development activities, of which only the use of technology is reported in the present paper. Survey questions on technology were designed to determine (a) the types of technology available to students and their teachers, (b) teachers' preferences for using technologies for various pedagogical tasks, (c) types of professional development accessed by teachers using digital music technologies, and (d) whether teachers thought that the use of mobile technologies was worth the effort to use them effectively. Survey questions regarding teachers' views and practices surrounding self-regulation determined (a) the role of goal setting, (b) strategies for learning between lessons, and (c) reflective practices.

A pilot version was distributed at a music conference in 2013 (Upitis et al., 2015a). Ethics clearance allowed us to deploy the survey through the database of The Royal Conservatory (RCM), as well as through music schools and conservatories across Canada. Both the French and English versions of the surveys are archived at www.musictoolsuite.ca. Data collection took place over a four-month period. Before analysis, we removed any files that did not have at least a 90% completion rate, which left us with 1,468 surveys. In addition to the questions with closed-ended responses, teachers were invited to respond to an open-ended prompt, to which 443 teachers provided responses. Frequency distributions, means, and standard deviations were produced for the closed-ended questions using SPSS (Ver. 22). After establishing the *a priori* codes for the open-ended prompt, one researcher coded all of the responses, and another member of the team examined 10% of the coded responses, reaching high agreement with the initial coder (Cohen's Kappa = 0.933, $p < 0.001$).

3. RESULTS

3.1 Teachers' Views of the Importance of Self-Regulation

Overall, the results show clear evidence that the teachers found a variety of self-regulating activities to be very important to their teaching practices. These included activities related to planning, strategies for completing music-related practising tasks, and reflecting on the next cycle of learning. On a scale of 1 (*not important*) to 7 (*very important*), teachers regarded the activities of breaking down complex tasks, identifying learning strategies, setting goals for between lessons, helping students become independent musicians, and setting goals for the year as the most important aspects of their teaching activities associated with student self-regulation. The full set of means and standard deviations appears in Table 1.

Table 1. Means and standard deviations regarding the importance teachers place on self-regulation

Question	<i>M</i>	<i>SD</i>
<i>How important are the following to you as a teacher? (1= not important ... 7 = very important)</i>		
Setting student goals for the year	6.16	1.15
Setting goals for the time between lessons	6.27	1.03
Ensuring that strategies for learning are identified	6.32	1.01
Breaking down a complex task into smaller parts	6.62	0.72
Requiring a practice schedule to be set	5.50	1.45
Analysing recordings of other performances	4.28	1.79
Critiquing recordings of other performances	3.75	2.01
Discussing lessons learned from reaching performance level of notated repertoire	4.98	1.75
Sharing a student's work with other students	4.22	2.00
Encouraging students to improvise or compose	4.57	1.92
Helping students become independent musicians	6.22	1.23

3.2 Teachers' Uses of Technology

Teachers were asked to describe their comfort with the use of technology on a scale from 1 (*not at all comfortable*) to 7 (*very comfortable*). More than a quarter (26.6%) of the respondents claimed to be *very comfortable* with the use of technology, with the average rating being 4.85 ($SD = 1.86$). Most teachers (80.4%) reported having Internet access in their teaching studios, and almost all teachers (96.3%) reported that their students had Internet access at home. Digital recorders and metronomes (analog or digital) were the most common tools used by the respondents. Mobile devices were much more popular than desktop computers, but nevertheless, there were many teachers who did not use mobile devices at all. For example, close to half of the teachers (46.6%) did not use Smartphones at all.

We asked teachers a range of questions including whether technology (a) improved learning, (b) required excessive resources, time, or effort, (c) involved too much troubleshooting, (d) required parental support to be effective, (e) increased student motivation, (f) was enhanced by instructional materials, and (g) required training to be successful. For all of these questions, the respondents were asked to answer on a 5-point scale, ranging from *strongly agree* to *strongly disagree*, with the middle response being *not sure*. In all cases, *not sure* garnered anywhere from a quarter to half of the responses. In some cases, the remaining responses were skewed towards the positive or negative end of the scale. For example, 67.8% of the teachers believed that technology improved student learning (choosing either *agree* or *strongly agree*), and 60.8% believed that technology helped motivate students to learn. Half of the teachers felt that digital technologies, both mobile and computer based, would only be successful if there was training on the use of the tools (53.3%).

Teachers were almost evenly divided in terms of whether using technology for planning would increase their students' success, with just over a third being *unsure* (37.9%) and roughly the same proportion of teachers (37%) *agreeing* that using technology for planning would increase success. The proportion was much higher in terms of using recordings to help students learn: most teachers believed that listening to themselves playing or singing would help students learn (on a scale of 1 to 5, where 1 = *strongly agree* 60.2% chose *agree* and 20.1% chose *strongly agree*, $M = 2.03$; $SD = 0.71$). The nuances regarding the use of audio or video recordings affecting students' abilities to learn new repertoire were explored further. For many teachers, this particular aspect of music teaching and learning held the most promise for enhancing traditional modes of teaching, as noted by their qualitative comments and as indicated by the mean reported above. However, as can be seen from the other reported means in Table 2, the teachers were still divided on this issue when it came to using technology for planning how to approach new repertoire, sharing recordings with other students, and sharing recordings with parents, as three of the four of the means were close to the middle response, namely *not sure* (3).

Table 2. Means and standard deviations regarding teachers' views of using recording technologies for repertoire

Question	<i>M</i>	<i>SD</i>
<i>Please indicate how much you agree or disagree with the following statements (1= strongly agree ... 5 = strongly disagree)</i>		
Using technology to plan for the learning of new repertoire will increase my students' success	2.62	0.91
Having my students use recordings of their playing will increase their abilities to listen and/or learn	2.03	0.71
Enabling my students to share recordings with other students will increase their abilities to learn	2.64	0.82
Enabling my students to share recordings with their parents will increase their abilities to learn	2.48	0.84

When asked how teachers use technology in teaching, the most common responses were to (a) compare performances by different musicians (55.9%), (b) share performances and links (34.5%), and (c) keep a record of student practising (28.9%). When asked if they would use technology for other activities, such as setting goals for the year, or to keep a record of weekly tasks, over half of the respondents indicated that they did not intend to use technology for these purposes.

There were 89 positive and 72 negative comments made about technology. Most of the teachers who were supportive of using technology spoke of the value of critiquing audio and video recordings. In many instances, those teachers who were opposed to using technology for music teaching commented on how technology "eats into the lesson time." Quite a number of teachers commented on how the time spent at the instrument should be a time focused only on the physicality of music making, without being mediated by technology. One teacher wrote, "During practice time at the piano, I feel that all technology should be turned off and the student[s] should be focusing on themselves, the piano, the music in front of them, and that's it." And yet, this same teacher also talked about using online recordings to inspire students, using technology to create weekly checklists, and the value of critiquing student recordings. Many responses about technology were similarly nuanced, expressing both positive and negative views about the use of technology.

4. CONCLUSIONS

The present paper contributes to our growing knowledge about independent music teachers, which is still an under-researched area of music education. While it is the case that many of these teachers appeared to be quite comfortable with using technology, and specifically, mobile devices, there were strong views expressed by teachers both in support of and against the use of technology to enhance specific aspects of music pedagogy and student learning. The lack of support for certain activities is not to be seen as a lack of support of technology in general, for as reported in the results, more than two-thirds of these teachers agree that technology improves student learning. Rather, embracing technology for some purposes and rejecting it for others is evidence of a careful approach to the use of digital tools for music learning. This approach was also evidenced by teachers identifying some activities (e.g., listening to recordings) for which technology was much more welcomed than for others (e.g., setting goals).

Why did so many teachers resist using technology to help formulate goals? It is not, as the evidence indicates, because of lack of access to technology or lack of comfort in using technology. Rather, it would appear that there are some activities associated with music learning that are already well in hand without the addition of digital tools. These findings are of particular interest to our research team, as part of our work is the ongoing development of mobile digital supports for this teaching context.

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