Article

How much professional development is enough? Meeting the needs of independent music teachers learning to use a digital tool

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Abstract
Even though there are demonstrated benefits of using online tools to support student musicians, there is a persistent challenge of providing sufficient and effective professional development for independent music teachers to use such tools successfully. This paper describes several methods for helping teachers use an online tool called iSCORE, including embedded online support, targeted email messages, webinars, and face-to-face workshops. Using contemporary frameworks for characterizing continuing professional development, the success of each of these teaching approaches, separately and in combination, is considered through an examination of teacher feedback, uptake of the tool by students, and the interview data from an advisory board made up of teachers, educators, software designers and developers, publishers, and business leaders. Inherent tensions and difficulties in designing appropriate professional development are discussed.

Keywords
Digital music tools, independent music teaching, professional development, student self-regulation

Despite numerous advances in music technology and changes in educational practices focusing on student-directed learning, independent music instruction has remained unchanged for centuries. For the most part, the independent music instruction dyad means that the student has the undivided personal attention of the teacher for 30 to 60 minutes each week, during which time the teacher

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shares his or her musical knowledge, demonstrates performance standards, helps to improve students' sight-reading, and suggests ways of practising during the week (Campbell, 1991; Kennell, 2002). In this manner, millions of children take weekly lessons and yearly conservatory examinations in countries world wide. However, many students stop taking lessons after a year or two. Indeed, some students stop playing only weeks after their lessons begin when they realize the level of commitment that is needed to learn to play an instrument and the isolation associated with practising (McPherson, Davidson, & Faulkner, 2012).

A survey of Canadian independent music teachers indicated that an overwhelming majority of independent music teachers, like their students, experience a sense of isolation (Feldman, 2010), which suggests that accessing colleagues, let alone professional development opportunities, is not a common occurrence. And so, steering the profession towards new teaching approaches is a difficult change to make.

It is clear that 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. There is research supporting the conclusion that online electronic portfolios can support student learning in a variety of subject areas (Dignath, Büttner, & Langfeldt, 2008; Meyer, Abrami, Wade, Aslan, & Deault, 2010). Children's explorations in music in school settings can be enhanced by the use of technology, as students tend to be more inventive and motivated when using technology in their creative work (Savage, 2007). Can it be the same for independent music students and teachers, and if so, in what ways can studio music teachers access professional development opportunities that focus on the adoption of digital technologies? The present paper is part of a larger project involving both the development and evaluation of digital tools to support music learning, based on a tri-institutional Canadian partnership (www.musictoolsuite.ca). The current paper focuses on the first of the four tools we have developed: iSCORE. In the next section, we examine the literature related to the three purposes of this study, namely, (a) to identify what kinds of professional development might be most effective for introducing independent music teachers to digital tools, (b) to design a professional development intervention based on the literature reviewed, and (c) to evaluate the effectiveness of professional development in the context of iSCORE as one example of a digital music tool.

Literature review

We begin the literature review with the theoretical basis of iSCORE and a summary of prior research on the use of iSCORE. This is followed by a detailed exploration of features of successful professional development to support the use of technology in educational contexts. Following the literature review, we describe in detail the professional development support for iSCORE that was designed in keeping with the directions suggested through the empirical and theoretical work reviewed from the literature.

Digital music tools: iSCORE

iSCORE is a web-based practice and communication tool. It was designed to help motivate students to take responsibility for their music learning. iSCORE has features to help students to set goals, create new work, edit and share their work, and respond to feedback from teachers, peers and parents. It also has functions to encourage teachers to communicate with their students and help their students become independent learners. iSCORE is available without charge to users worldwide (www.rcmusic.ca).

The theoretical learning model underpinning iSCORE is that of self-regulation, a cyclical and multi-layered process involving the complimentary phases of planning, doing, and reflecting.

(McPherson & Renwick, 2011; McPherson & Zimmerman, 2011). Music content is embedded in the software, and special tools, such as a video annotation function, also form part of iSCORE, encompassing the three phases of self-regulation—planning, doing, and reflecting. Access to iSCORE is ubiquitous: as long as teachers and students have web access, they also have access to their musical work. Teachers can also download lesson plans and take part in web-based professional development opportunities directly through the iSCORE tool, including a "wiki" environment embedded in iSCORE. Another powerful possibility of iSCORE is that it allows students to link music-making that occurs in school and outside of school. Research indicates that students who link their independent music studies to their classroom experiences are more likely to be engaged in music learning (Upitis, Abrami, Brook, Troop, & Catalano, 2010).

Prior research shows that iSCORE can be a successful tool for helping students set realistic practice goals, document their work between lessons, and to reflect on the progress they make as they work towards mastery of the instrument and fulfilment as musicians (Upitis, Abrami, Brook, Troop, & Varela, 2012; Upitis, Brook, & Abrami, 2014; Upitis, Wynnpaul, & Abrami, 2013). Further, iSCORE contains communications tools, thereby decreasing the isolation that is often associated with independent music study. Finally, iSCORE has the potential to shift the traditional teacher–student dyad to a form of learning where the student gradually takes more control over his or her musical development.

Engaging teachers: Features of successful professional development

Even though there are demonstrated benefits of using iSCORE to support student musicians, an ongoing challenge is to provide sufficient and appropriate professional development for those teachers who are intrigued by the possibilities of using iSCORE to support their teaching (Upitis, Brook, Abrami, Varela, & Elster, 2012). This challenge is not unique to iSCORE: other educational innovations involving technology face a similar hurdle (Meyer, Abrami, Wade, Aslan et al., 2010; Meyer, Abrami, Wade, & Scherzer, 2010). Over the past century, there have been countless technological advances aimed at improving teaching and learning. In 1922, Thomas Edison predicted that "the motion picture [was] destined to revolutionize our educational system, and … in a few years, it [would] supplant largely, if not entirely, the use of textbooks" (Cuban, 1986, p. 9). But the motion picture did not revolutionize education, nor did textbooks disappear. Films and projectors were expensive, the hardware was unreliable, and teachers claimed that the films were not related to the curriculum. The demise of the "motion-pictures-will-revolutionize-education" movement was also related to insufficient support for teachers. Many teachers lacked the skills needed to use film projectors, and there was little in the way of structures or policies to support the infusion of films into schools (Cuban, 1986; Upitis, 2001). Consequently, only a small group of teachers used films in their classrooms. This is the Achilles' heel of technological innovation in education: tools are developed, but without appropriate and extensive teacher support, they are unlikely to be utilized to support student learning (Duran, Brunvand, Ellsworth, & Şendağ, 2012; Meyer, Abrami, Wade, Aslan et al., 2010; Meyer, Abrami, Wade, & Scherzer, 2010; Upitis, 2001).

But what kind of teacher support is most effective? Numerous research studies have been conducted to identify so-called "best practices" for the professional development of teachers and to categorize the types of professional development that have been designed (Fishman, Marx, Best, & Tal, 2003; Garet, Porter, Desimone, Birman, & Yoon, 2001; Kennedy, 2005). Results from these studies suggest that teachers will benefit most from learning that is designed to build on their strengths, their disciplinary knowledge, and their interests—in other words, professional development that is teacher-centred and connected to the teacher's daily responsibilities (Fishman et al., 2003; Hunzicker, 2011). These teacher-centred approaches are also most likely to result in

professional development that is transformative in the sense that it results in changed and improved practice on the part of teachers (Kennedy, 2005). Further studies demonstrate that use of technology in education can be predicted by (a) teachers' expectancy of success and perceived value of using technology, (b) teachers' use of technology outside the classroom (those using computers for personal use are more likely to use technology in the classroom), and (c) type of use by teachers (whether predominantly for search for information or for creating new work). Of these predictors, expectancy and perceived value are the best predictors of success (Wozney, Venkatesh, & Abrami, 2006). In other words, if teachers think the technology will be valuable and expect that it will aid in student learning, it is more likely that the tool will, indeed, aid in instruction.

Designing professional programmes: What to include. Research has demonstrated that professional development should include specific reference to content knowledge and general pedagogical knowledge, including explicit attention to effective teaching strategies for particular content areas (Hunzicker, 2011; Shulman, 1987). In the context of the present study, this research leads us to predict that the most effective professional development will involve attention to knowledge about music and performance (content knowledge) as well as acknowledging the particular context of independent music teaching, where teachers typically only meet with their students once a week for less than an hour at a time (general pedagogical knowledge). Researchers and practitioners alike argue that professional development sessions should include explicit opportunities to examine how students learn, discussions around potential misconceptions that can arise during instruction, and the demonstration or modelling of effective teaching strategies that can be employed to address those misconceptions (Wozney et al., 2006).

Despite the evidence pointing to the importance of addressing content and pedagogical knowledge in professional development, training in educational technology more often focuses on learning to use the technology rather than learning how to teach with the technology (Duran et al., 2012; Moursund & Bielefeldt, 1999). This leads to the unfortunate result that teachers fail to become comfortable in using technology for instruction, often citing lack of time and support as their reasons for failing to use technology to support student learning (Koehler & Mishra, 2008). Studies abound lamenting the lack of success for professional development related to educational technology, not only in the short term, but also in terms of sustained changes in practice (e.g., Bingimlas, 2009; Russell, Bebell, O'Dwyer, & O'Connor, 2003; Stephens & Hartmann, 2004; Stes, Min-Leliveld, Gijbels, & Van Petegem, 2010).

One example to the contrary is provided by the research of Mouza (2009), where evidence from a three-year longitudinal case study suggests that teachers can successfully use technology to improve teaching practice with *targeted* and *sustained* professional development. In addition to providing opportunities to apply and extend both content and pedagogical knowledge, Mouza ensured that collaborative meetings and workshops for teachers focused on meaningful learning that would promote changes in practice and lead to educational reform, that teacher needs were continually addressed, that there were opportunities for active learning, that collegial supports were strong, and that the professional development occurred over an extended period of time.

A range of approaches: From transmission to transformation. The findings described by Mouza dovetail with the models of continuing professional development outlined by Kennedy (2005). In her analysis of the literature on the range of professional development models, Kennedy describes four models that were designed to transmit information to teachers, allowing little room for developing capacity for professional autonomy. These include the ubiquitous training model, where teachers update skills by learning from an expert who pre-determines the agenda. The second of the transmission models is the award-bearing approach, where completion leads to certification by a

recognized body, bringing with it the notion of quality assurance. The third, the deficit model, describes professional development designed to address a perceived problem in teacher performance. Fourth is the cascade model, sometimes referred to as "train the trainer", which, like the training model, is generally skills-focused and often used where resources are limited.

Another group of approaches, termed transitional by Kennedy (2005), encompass the *standards-based model, coaching/mentoring approaches*, and *communities of practice*. The standards-based model recognizes that teaching occurs within a bounded system, and while it is criticized for underestimating the complexity of teaching (Kennedy, 2005), it nevertheless explores connections between teacher effectiveness and student learning. Coaching and mentoring, generally between two teachers where one is a novice and the other more experienced, has the ability to be a collegial arrangement, but may be hierarchical and may not lead to a transformative experience. Kennedy notes, however, that regardless of whether the coaching/mentoring approach is collegial or hierarchical, it relies on a strong inter-personal connection between the mentor and mentee. Finally, the community of practice model involves collective professional activity that has the potential to build new knowledge about practice. However, as with any community, the experience for any particular teacher could be proactive or passive, depending on individuals' understanding of the community and the formal and informal relations between the community members. Kennedy acknowledges that communities of practice can act as "powerful sites of transformation, where the sum total of individual knowledge and experience is enhanced significantly through collective endeavour" (p. 245).

The final two approaches, which Kennedy (2005) characterizes as transformative, include *action research* and a more general *transformative approach*. Kennedy claims that action research has capacity both for transforming practice and for professional autonomy on the part of teachers. The last "model" that Kennedy describes is actually a combination of processes and conditions of the type identified by Mouza (2009). Kennedy herself says "it could be argued that the transformative model is not a clearly definable model in itself; rather it recognises the range of different conditions required for transformative practice" (2005, p. 246). This range of conditions includes an emphasis on enquiry rather than practice alone, and an awareness of issues of power, namely, whose agenda is being served through the professional development offerings. Thus, because of the emphasis on conditions to sustain transformation rather than an explicit model *per se*, Kennedy suggests that greater capacity for professional growth exists when a range of models is integrated along with an awareness of where there are tensions among stakeholder groups. We would add another dimension to Kennedy's argument, namely that the employment of a range of models has the potential to engage a broader group of professionals, and further, that some forms of professional learning may be more appropriate at different stages as teachers are learning about new tools and generating new knowledge. In other words, there are times when even a training model can be effective, especially if the agenda is, at least to some extent, driven by the learners, with the possibility of more engaged professional development to follow.

The features identified by Mouza (2009) and the models described by Kennedy (2005) were used to guide the professional development developed for introducing teachers and their students to iSCORE. In the next section, the development of the intervention—namely, the iSCORE professional development programme—is described.

Creating the iSCORE professional development programme

iSCORE was publicly launched in January 2012 through Canada's Royal Conservatory (RCM: www.rcmusic.ca). Eight months later, over 500 teachers had signed up for iSCORE accounts. Recognizing the need to provide support for teachers to help them learn the functionality of the

tool as well as to implement iSCORE in their teaching, professional development resources were developed prior to the launch, and a variety of delivery models were created. These resources were developed by a group of four teacher advisors, who were also involved in the design and development of the tool. Over time, our professional development programme came to include four modes of delivery: (a) embedded tools, (b) workshops (webinars and face-to-face) characterized by a blend of training and communities of practice models, (c) targeted email messages with aspects of the training, coaching/mentoring, and community of practice models, and (d) studio visits to work one-on-one with individual teachers. This fourth form of professional development fits squarely with the coaching/mentoring paradigm characterized by a collegial, rather than hierarchical, approach. These four types of approaches are described in detail below.

Tools embedded in iSCORE

The iSCORE tool itself has embedded professional development support explaining how to use the various features and providing suggestions for implementation. These resources are available in a number of formats including videos, audio files, and PDF documents. The online tools embedded in every iSCORE account comprise video clips that describe the features of the tool (in both French and English). Just-in-time prompts support students and teachers using the portfolio, and research papers on self-regulated learning provide background information about the underlying structure of the e-portfolio. Lesson plans and suggested activities that teachers could use to help students create strategies for practising and to reflect on their learning to help plan for the next phases of their growth using iSCORE are also included. Embedded tools also include a teacher "wiki", providing a forum for teachers to engage with one another regarding the use of iSCORE and student learning and to build a community of practice. There is also a "How to Get Started" resource guide linked to the homepage, so that new users are prompted to begin using the embedded professional development materials as soon as they open their new accounts.

Virtual and face-to-face workshops

In addition to the online iSCORE tools and downloadable print materials, a two-hour webinar was created to introduce teachers to the main features of iSCORE. Half-day and full-day face-to-face workshops were developed with the same goal, namely, to introduce teachers to the tool and to work directly with them as they explored various tool features. Experienced iSCORE teacher advisors, who are also independent music teachers, lead the workshops, thus giving the workshop instructors both the credibility and experience required to conduct the workshops successfully. In addition to their work as workshop leaders, they were also advised on tool development and supported the research related to iSCORE use.

The face-to-face workshops were based in urban areas across Canada and webinars sessions and were offered every six weeks. These sessions were advertised on the RCM website and teachers received an invitation to these events when they received their accounts. In addition, we established a wiki that contained information about the tool as well as a platform where teachers could exchange ideas among each other. A link to the wiki is located in the tool itself as well as on the RCM website, to provide teachers with a structure to support communities of practice.

Despite being informed and reminded about webinars and workshops, through personalized emails, newsletters, and the RCM website, only a small proportion of teachers—fewer than 6%—availed themselves of the webinar and workshop options. An even smaller portion of teachers became active users of iSCORE in the first eight months of the life of the tool, and most of the

active users did, in fact, take part in a webinar or workshop. As a result of the low teacher uptake, two additional methods were then developed to reach teachers and their students: targeted email messages and studio visits.

Targeted email messaging

Targeted email messages were sent to teachers. Taken as a group, these targeted emails contain information on characteristics of the training, coaching/mentoring, and community of practice models. The first of these emails is automatically generated when teachers sign up for an account, inviting them to take part in a webinar or workshop. In addition, teachers with dormant accounts (no activity for four to six months) are sent a friendly and informative message, encouraging them to access their account and to personalize their home page. Other short instructional messages were created to engage the teachers in one aspect of iSCORE at a time. These instructional "morsels" included (a) uploading student work, (b) using the calendar to schedule student lessons and rehearsals, (c) using the home page as an electronic music dictation book, and (d) using iSCORE to support composition and improvisation. The targeted messaging is in keeping with approaches used by other digital instructional tools, such as Edmodo (www.edmodo.com), where each email describes a discrete task, indicates how long the task will take to complete, and builds on previous knowledge. At the end of a pre-determined set of emails, a "graduation" certificate is issued, harking to the award-bearing approach described by Kennedy (2005).

Studio visits: Coaching and mentoring

The final approach was to employ regular one-on-one studio visits to work individually with teachers, where the teacher played the primary role in setting the agenda. Each of these visits was conducted by an experienced teacher advisor, and new teachers and teacher advisors alike reported that they quickly established a collegial and strong rapport. The types of topics explored during the studio visits, which ranged from one to two hours in duration, included basic functions in setting up iSCORE on home laptops, to creating electronic music dictation books, to using the embedded recording and annotating tools to support student practice. While the order of topics and ways that they were explored varied with each of the teachers, by the end of a six-month period, each teacher had explored similar topics, which were also covered in the virtual and face-to-face workshops with multiple teachers.

Research questions

At the outset, we noted that this study was designed to identify what kinds of professional development might be most effective for introducing independent music teachers to online digital tools in order to develop appropriate professional development for iSCORE. Another purpose of the study was to evaluate the effectiveness of the professional development strategies for iSCORE in particular—the research component of the study. Thus, the study addresses the following research questions:

1. How did teachers, advisors, and students experience iSCORE in terms of professional development opportunities and embedded online support?
2. In what ways can the professional development structures surrounding iSCORE be enhanced and modified?

Method

In order to address the research questions regarding the effectiveness of the professional development intervention designed for iSCORE, we used a series of data collection methods to enlist the views of various stakeholder groups and qualitative analyses to assess their responses. Methods of data collection included individual interviews, focus groups, and online surveys. Participants included students, teachers, and other professionals involved in independent music teaching, as described below.

Research participants

There were three groups of teachers who took part in the research, ranging from teachers who were closely involved with iSCORE to teachers who were unknown to the research and development teams. The first group comprised four teacher advisors, who were closely affiliated with the iSCORE project. The second group comprised 10 studio teachers who were selected to represent the range of independent music teachers in Canada by instrument type, years of experience, and size of studio. The third group of teachers was made up of all of the teachers who signed up for iSCORE accounts in the first year of its release, some of whom attended face-to-face professional development workshops.

The iSCORE Advisory Board also took part in the study. The Board comprised 30 members representing teacher associations, music publishing, the business sector, independent teachers, software designers and developers, and educational institutions.

The third group of research participants was the iSCORE Student Advisory Committee, made up of students taking independent music lessons, and ranging from 12 to 22 years of age. These students were nominated by the teacher advisors involved in the study.

Data collection

Teachers. The four iSCORE teacher advisors who were directly involved in developing and assessing the professional development tools were individually interviewed four months after the tool was released. Interview questions included: "What has your experience been with iSCORE?" "What features do you find useful?" "What aspects of the tool, if any, are frustrating to you?" "How has iSCORE changed your teaching/learning?"

Two of these teachers also took part in a two-day session six months after the tool was released in order to debrief on the results of the professional development that had taken place in the first six months, as well as to plan new strategies. During this two-day session, informal conversations took place with the researchers, and field notes were made to record these conversations.

The 10 studio teachers recruited for the study received one-on-one mentoring in their studios from teacher advisors over the course of one year where they each received two studio visits in the fall, a studio visit in the spring, and regular contact through email with the teacher advisors. These studio visits and email follow-ups were marked by their responsiveness to each teacher's needs. In this way, the teacher advisors tailored both content knowledge and pedagogical knowledge to each context through a collegial coaching/mentoring approach. Through the course of the studio visits, the teacher advisors interviewed teachers regarding their pedagogical practices, so as to further refine the professional development to address the nuances of their students' learning, particular challenges and misconceptions students might face, and to suggest ways to help students overcome learning hurdles.

There was also a large pool of teachers who had signed up for an iSCORE account and received offers for webinars and workshops, as well as targeted email messages and the supports built into the tool. We were able to generate descriptive statistics for this group of teachers to determine uptake on workshops and increased activity following the delivery of targeted email messages.

Advisory Board. We conducted focus group interviews with the iSCORE Advisory Board. The Board was divided into four smaller groups for these interviews, and the stakeholders responded to questions about how to enhance professional development for iSCORE users.

Students. The student group was interviewed in a focus group about their experiences using iSCORE, focusing on ways in which iSCORE aided or hampered their music learning.

Data analysis

Most of the data collected in the present study comprised observations, individual interviews, and focus group interviews. Partial transcriptions were made of these interviews by one member of the research team. At least two members of the team analysed all of the partial transcripts, using established methods for qualitative analysis, that is, identifying themes by coding patterns of responses (Patton, 2002; Yin, 2009). Some codes were agreed upon a priori, based on the literature and the development of iSCORE (e.g., content knowledge, student goal-setting, pedagogical knowledge, communication), while others emerged during coding (e.g., print manual, navigation, text requirements). We also gathered user statistics from iSCORE accounts so that any changes in use could be measured after teachers took part in any of the professional development opportunities.

Results

Teacher views

There was clear evidence that the face-to-face workshops, webinars, and other forms of personalized instruction, including the studio mentoring visits, were the most successful means of reaching teachers. The teachers who experienced successful professional development reported that they became more explicit about their expectations regarding what students were to accomplish as a result of using the tool. After taking part in the workshop, teachers were better able to imagine how to incorporate the tool into their studio practices, demonstrating the professional autonomy that Kennedy (2005) identified as a hallmark of transformative learning. Several teachers commented on the fact that the professional support was crucial in the otherwise lonely and isolated teaching context, as reflected in the comment below:

> Thank you very much for your webinar. I am very interested in incorporating elements of iSCORE into my new guitar studio … iSCORE will actually incorporate all of the aspects I was looking to utilize in my class structure, and more. There is very little [professional support] for classical guitar … there are only two teachers in the city that teach classical guitar; one is limited to Monday classes, and the other is integrated through the University. Therefore I find it critical to be able to take the knowledge I have gained and be able to share it effectively with students. iSCORE will help me do that.

Teachers who took part in the webinars and workshops also began to use the tools embedded in iSCORE more frequently. Further, teachers who took part in these workshops began to tell other teachers about iSCORE, forming an informal network or community of practice, for teacher-to-teacher

mentoring. As iSCORE continues to be disseminated to teachers, we will look to teacher mentors to assist further with the professional development training.

The one-on-one studio visits were also successful, although this success depended in part on the teachers' familiarity with technology. In the cases where the teacher was unfamiliar with digital tools in general, there was a limit to how much could be accomplished in each session with iSCORE. iSCORE has many features, and navigating the tool can be daunting for those teachers whose use of technology only includes fairly low level tasks, such as email and simple word processing. However, there is no question that the studio visits were important in establishing rapport between the new teachers and teacher advisors, and this rapport enabled the new teachers to confidently approach the teacher advisors throughout the course of the academic year. The strong rapport that was established also enabled the teachers to be frank in their assessments of their use of the tool, students' use of the tool, and additional support that they needed. Two of the ten teachers indicated that they would like a workshop with other teachers that followed a traditional training model. One teacher said that she was very comfortable continuing on her own, but wished for a print manual that encompassed the technical and pedagogical supports built into the tool. One teacher indicated that he was perfectly happy to find what he needed online, as long as he could contact someone if he ran into difficulties he could not solve on his own. The remaining six teachers appeared to be satisfied with the coach/mentoring approach, although their take-up of the tool was still somewhat limited at the end of the academic year.

While there was evidence that workshop and webinar approaches were more effective than the embedded online tools alone, we also have evidence that the simple email messages, targeted specifically to iSCORE use and music content knowledge, were effective for some users. Each email message led to new account activity for 10–15% of formerly dormant accounts. Other online learning tools use this type of targeted email approach successfully, and we expect to learn from these related tools as we hone and deepen our professional development offerings. While the emails, at first glance, appear to be no more than a transmission of tips for using the tool, even these messages have a place when they are part of a suite of professional development offerings ranging in scope and approach. Combined with other forms of professional development, they can contribute the process of building support for the professional autonomy of teachers.

Stakeholder views

During a full-day advisory session, held eight months after the software was launched, the advisors identified five key issues to consider for deepening professional development, as follows:

1. **Messaging**—create a compelling set of messages addressing what iSCORE offers, how it is unique, and what benefits it brings to students, teachers, and parents. Prepare messages in response to the "hard questions" as well, including the question "Will using iSCORE take more time?"
2. **Videos**—provide a series of short, upbeat, student-centred, and informative videos about various aspects of iSCORE, and make them available in the portfolio itself, on the RCM website, and through YouTube. Longer videos with greater detail, as well as recorded webinars, could also be employed.
3. **Showcase student work**—contests and other forms of showcasing student work (e.g., a site featuring student produced videos) will help generate interest and inform users about the potential of iSCORE.
4. **First adopters**—learn from the early users of iSCORE to see what drew them in, and what made them stay with the tool.

5. **Distributed model for support**—structure professional development within a distributed or web-like model, rather than relying on traditional models that are top-down in their approach. Make use of peer mentoring, by developing systems for student-to-student, parent-to-parent, and teacher-to-teacher support.

These recommendations confirmed the appropriateness of the already established professional development programme, and provided insights regarding additional resources that could be developed. For example, after receiving the recommendations for the stakeholders, we began to include student work from teachers who were first adopters. These exemplars of student work served to provide additional resources for workshops and webinars and studio visits. Student work now appears in a print manual for teachers, and is regularly showcased on the website www.music-toolsuite.ca.

Student views

The Student Advisory Committee identified what they called the "top ten" reasons to use iSCORE, which they felt would be important to share with teachers who might be considering whether to use the tool. They summarized their views in a short video, the gist of which is as follows:

1. **Focus**—iSCORE allows you to focus on one thing: music. Unlike Facebook or Twitter, where lots of other things are going on, iSCORE allows you to focus on one aspect.
2. **Teacher feedback**—you can receive guidance and help throughout the week, instead of waiting until your lesson and developing bad habits. It also allows you to learn quickly and efficiently, as you can avoid setbacks.
3. **Peer feedback**—allows you to receive peer feedback from students at your level or a different level, providing you with a variety of responses from different points of view, other than your teacher's, encouraging you to broaden your playing style.
4. **Improves listening and critical thinking**—allows you to think critically about your own and others' work, and become more independent.
5. **Process**—the process in iSCORE allows you to think about specific goals and strategies that help contribute to a great process.
6. **Accomplishments**—allows you to see and reflect how you've progressed and improved, and also allows you to set deadlines to reach your goals.
7. **Helps you focus**—you can see your plan, and you don't make the same mistakes every time. It helps you progress.
8. **Personalize**—iSCORE allows you to personalize your home page, which means you can choose your own banner and photos. You can also write an introduction to your account, tell people about yourself, and make videos of yourself playing.
9. **Easy to use**—iSCORE is easy to use for people with experience on different platforms, or people with no experience with computers at all.
10. **Confidence**—the finished product of [being able to perform] piece always feels great, and being able to look back on your progress and know how you came to finish it provides a great sense of accomplishment and boost of confidence. iSCORE documents prove that you can really master a piece.

Students indicated that they understood many aspects of self-regulation as it applies to music learning (e.g., goal setting, reflection, the cyclical process of learning, the role of motivation and confidence on learning) and that they found the tool both attractive and accessible. The teachers of these

students had engaged in professional development workshops, thus these student findings confirmed the efficacy of the professional development content for the face-to-face workshops.

Conclusions

Teachers who took part in webinars and face-to-face workshops enjoyed considerable success as evidenced by their experiences in the workshop, their use of the tool, their students' use of the tool, and subsequent networking with other teachers. As predicted from the literature, elements contributing to successful professional development included attention to both content and pedagogical knowledge, a collaborative approach in workshops as well as meetings, emphasis on transforming music teaching and learning, hands-on opportunities to engage with the software, and an environment marked by collegiality and professional respect. It is anticipated that in order to sustain the learning that has taken place to date, these supports will need to be continued and deepened over a longer period of time.

While we can report, with confidence, success for the professional development that took place with a portion of the teachers who enrolled in webinars and workshops, it nevertheless remains the case that only a small proportion of teachers elected to take these workshops. This, in itself, would not be problematic if there was widespread take-up of the tool in their studios, but this was not the case. Many teachers who signed up for accounts did not use their account once it was opened; others used theirs minimally but didn't involve their students.

At times, our inability to provide the kind of professional development to encourage more music teachers to use iSCORE effectively was almost crippling—what other methods could we possibly devise? How much professional development is reasonable for independent music teachers who are running small businesses and do not have the structures that classroom teachers enjoy that enable them to take part in professional development? Many music teachers have complex schedules that make the most effective forms of professional development—namely face-to-face sessions with teacher colleagues—difficult or impossible. Ironically, we conclude both that *there is never enough* and *already too much* iSCORE professional development. That is, with every type of professional development offered, teachers suggested other ways that they might be supported, as evidenced by the teacher who requested print materials in addition to the identical materials embedded as PDF files in iSCORE. Yet, if iSCORE is to work with a large number of independent music teachers—thousands of them—then it cannot reach that scale of use if it requires extraordinary amounts of professional development in order for it to be used and embraced.

Thus, an ongoing challenge for the widespread dissemination of the tool, and others like it, will be to continue to develop ways of reaching more teachers so that they and their students might benefit from iSCORE, and reaching them in ways that offer professional autonomy and transformative possibilities. In addition to the targeted email approach, we will determine the success of other approaches in place of, or to supplement, the intense training that is possible in the workshop context. These approaches might include incremental training through email, newsletters and websites featuring student work as represented by portfolios and video clips, ambassador teachers, and a marketing approach capitalizing on the students' "top ten reasons". We are also investigating innovative approaches such as the one described by Walsh et al. (2013) where teachers have access to a "trainer in the pocket", by linking with support through their mobile phones as part of a network of professional development supports. This approach has promise, if the pilot results—with 4500 teachers and 300,000 students—are any indication.

Another possibility we are now pursuing is to make substantial changes to iSCORE itself. When some of the features of the tool that are currently addressed through professional development become more intuitive and require less intervention on the part of those delivering the professional

development, the need for professional development may diminish, or shift away from functionality towards pedagogical issues of importance to the teachers. It is also the case that not every tool will have widespread appeal. With the growth in the number of digital tools to support music learning, teachers may simply not have the time or the desire to examine all of the tools at their disposal. Further, a number of the teachers involved in the study were part-time music teachers and had other full-time professional work as accountants, lawyers, and public school teachers. This makes finding extra time for professional development even more challenging.

The 1989 baseball movie, *Field of Dreams*, popularized the adage, "Build it and they will come". In the context of iSCORE, our work has revealed that, while teachers are attracted to the tool, building it is not enough. In order to ensure widespread and sustainable use of iSCORE, teachers also need access to various forms of professional development in order to embrace the dream of transforming music education. Ultimately, if such a transformation is successful, then students who choose to learn to play an instrument may achieve sufficient mastery to be able to enjoy music-making throughout their lives.

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