

PROVIDING EFFECTIVE PROFESSIONAL DEVELOPMENT FOR USERS OF AN ONLINE MUSIC EDUCATION TOOL

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Abstract

Even though there are demonstrated benefits for using online web-based tools to support student musicians, there is the persistent challenge of providing sufficient and effective professional development for independent music teachers to use such tools successfully. This paper describes several methods for engaging teachers, including embedded online support, targeted email messages, webinars, and face-to-face workshops. The success of each of these approaches, separately and in combination, is considered through an examination of teacher feedback, the 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.

Keywords: Music education, independent music teachers, technology, self-regulated learning.

1 INTRODUCTION

Despite the numerous advances in music technology and concomitant changes in educational practices focusing on the benefits of student-directed learning, independent music instruction remains largely unchanged. Although millions of children take weekly lessons and yearly conservatory examinations in countries world wide, 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 so that it is personally satisfying [1]. Others play for several years, but not long enough or effectively enough to become skilled at their instrument at a level that can sustain them in their adult lives.

This lack of engagement results, in part, from ineffective practice strategies on the part of students. It also comes with the isolation that music students experience when they are expected to practice at home between lessons. A recent survey of Canadian studio teachers indicated that an overwhelming majority of independent music teachers also experience a sense of isolation [2].

Technology can reduce isolation for both music students and their teachers by providing the means for students and teachers to interact between weekly lessons. iSCORE is an online learning tool, specifically developed to support students learning to play a musical instrument from independent (studio) teachers. Prior research shows that iSCORE is 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 fulfillment as musicians [3]. Further, iSCORE contains tools that encourage students to communicate with one another, thereby decreasing the isolation that is often associated with independent music study.

2 LITERATURE REVIEW

There is considerable literature supporting the conclusion that online electronic portfolios can support student learning. More specifically, children's explorations in music can be enhanced by the use of technology, as students tend to be more inventive and motivated when using technology in their creative work. The demonstrated benefits of using music technology include more active involvement in music-making on the part of students, as well as increased pride and enthusiasm for their music learning [4].

Despite the acknowledged benefits of using technology to support music education, it is sometimes difficult for independent music teachers to use technology in their teaching. While students may find the tools relatively easy to use, teachers may struggle with new technologies. In addition, students may have greater access to mobile devices and music software, and have a range of knowledge and

awareness of musical styles that differs from the musical knowledge of their teachers. In the hands of a teacher who is ready to capitalize on these student characteristics, such characteristics can serve to both broaden and deepen students' music-making, potentially engaging them more fully in their music learning.

2.1 iSCORE

The electronic portfolio called iSCORE has been developed to support music teaching and learning, focusing on the independent/studio model.

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 [5, 6, 7, 8]. Music content is embedded in the software, and special tools, such as a music editor and a video annotation function, form part of iSCORE. The three phases of self-regulation—planning, doing, and reflecting—are embedded in iSCORE and these three sections mirror the creative process described in many curriculum documents, including the Ontario Arts Curriculum produced by the Ontario Ministry of Education [9].



Fig. 1 Using iSCORE to Support Piano Practice

Access to a web-based tool like 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.

One of the powerful possibilities of iSCORE is that it allows students to link music-making that occurs in school and outside of school. Research indicates that the students who link their independent music studies to their classroom experiences are more likely to be engaged in music learning in both the short- and long-term [10]. In turn, these students are more likely to continue to be involved in creative music-making as adults.

2.2 Engaging Teachers: Features of Successful Professional Development to support the use of Technology in Teaching and Learning

Even though there are demonstrated benefits for using iSCORE to support student musicians, an ongoing challenge is to provide sufficient and appropriate professional development for teachers to use the tool successfully. This challenge is not unique to iSCORE: other educational innovations involving technology face a similar hurdle [11, 12].

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” [13, 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. These particular constraints, in fact, have not been found to hinder the use of iSCORE, as iSCORE is available without charge and can be used on various platforms. Further iSCORE was developed to relate directly to the work of independent music teachers and their students so the curriculum issue is not a constraint. But 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 organizational structures or policies to support the infusion of films into schools [13, 14]. Consequently, only a small group of teachers used films in their classrooms. This is the Achilles heel of technological innovation in education: fine tools are developed, but without appropriate and extensive teacher support, they are unlikely to be utilized in the ways that make them powerful tools to support student learning [11, 12, 14, 15].

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 for teachers [16, 17, 18]. These studies have demonstrated 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 [17]. Further studies also 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 [16]. In other words, if teachers think the tool will be helpful, and expect that it will aid in student learning, it is more likely that the tool will, indeed, aid in instruction.

Research has also 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 [19]. In the present study, this implies that the most effective professional development would involve attention to knowledge about music and performance (content knowledge) as well as acknowledging the particular context of independent or studio 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 of effective teaching strategies that can be employed to address those misconceptions [17].

Despite the evidence for the importance of addressing content and pedagogical knowledge in professional development, training in educational technology more often focuses learning to use the technology rather than learning how to teach with the technology [15, 20]. This leads to the unfortunate result that teachers fail to become comfortable in using technology for instruction, often citing lack of time and support that as their reasons for failing to use technology to support student learning [21, 22]. 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 [23].

One example to the contrary is provided by the research of Mouza, where evidence from a 3-year longitudinal case study suggests that teachers can successfully use technology to improve teaching practice with *targeted* and *sustained* professional development [23]. In addition to providing opportunities to apply and extend both content and pedagogical knowledge, Mouza ensured that the 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. These features were used both to develop and to analyze the characteristics of professional development described in the present study.

2.3 Research Context

iSCORE was publicly launched in January 2012 through Canada’s Royal Conservatory of Music (www.rcmusic.ca). Eight months later, over 500 teachers had signed up for iSCORE accounts. At the time that teachers received their accounts, they were also invited to take part in webinars and/or face-to-face workshops. The iSCORE tool itself also has professional development supports embedded directly in the tool including videos, pdf files, and lesson templates.

Despite being informed about webinars and workshops, through personalized emails, newsletters, and the RCM website, only a small proportion of teachers—less 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, several new methods were developed to reach teachers and their students, based in part on the research findings revealed in the literature as cited above. Further enhancements to the professional development offerings are planned for the 2012-2013 academic year. The success of these various methods are described and assessed in the

present paper, in order to address the basic research question, namely: What are the most effective ways of providing professional development for iSCORE teachers?

3 METHOD

In this exploratory study on effective professional development for iSCORE teachers, we provided our teacher participants with three forms of professional development: (a) embedded tools, (b) workshops, and (c) targeted email messages. A fourth form of professional development, studio visits to work one-on-one with individual teachers, is planned for the upcoming academic year (2012–2013).

3.1 Strategies to Support Professional Development for using iSCORE

3.1.1 Tools Embedded in iSCORE

The online tools embedded in every iSCORE account are comprised of video clips (in both French and English), just-in-time prompts to support students and teachers using the portfolio (see Fig. 2), research papers on self-regulated learning in music education, as well as lesson templates for helping students create strategies for practicing and to reflect on their learning to help plan for the next phrases of their growth. 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. The “How to Get Started” resource is 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.

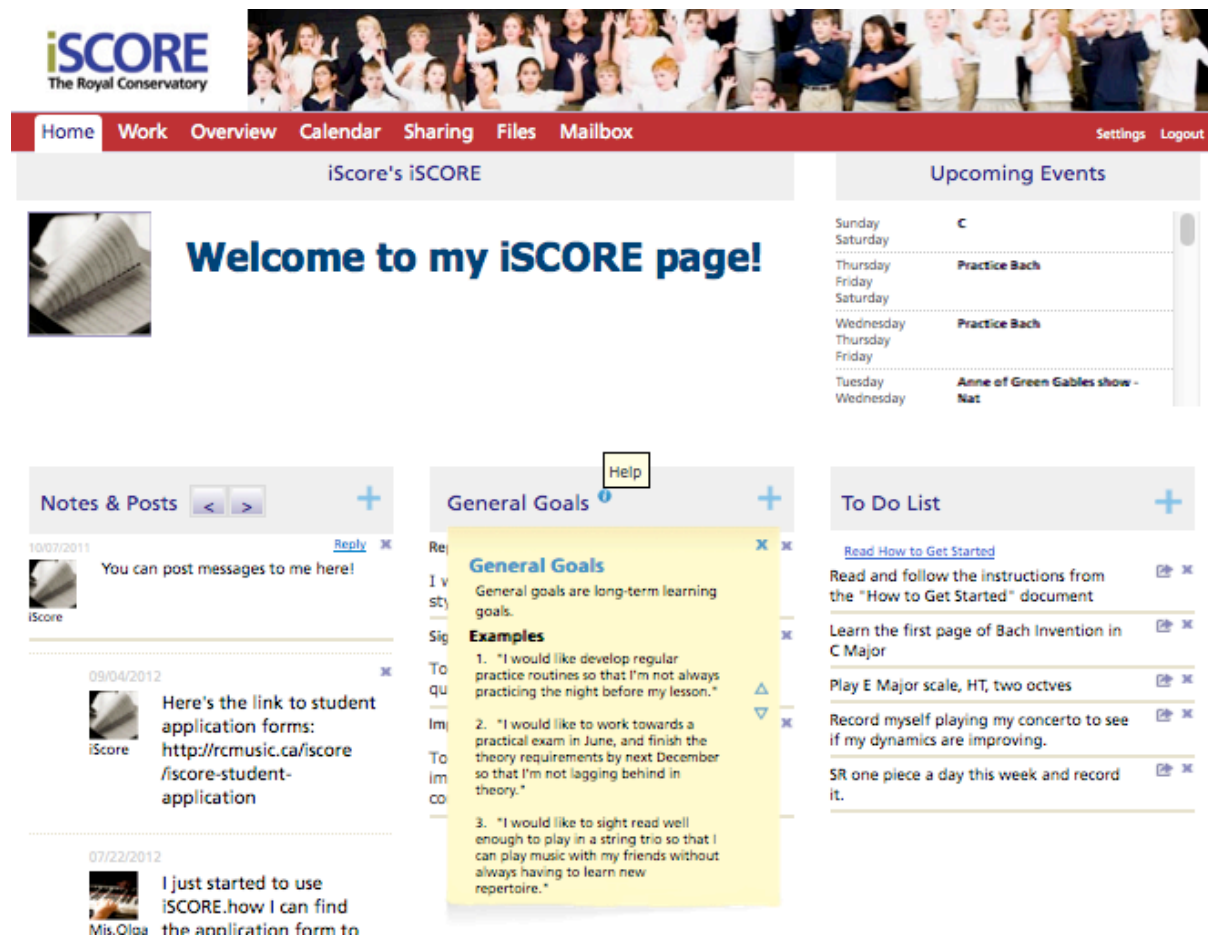


Fig. 2 iSCORE home page with “just-in-time” help for general goals setting

3.1.2 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 also 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 users who are also independent studio teachers lead the workshops, thus giving the workshop instructors both the credibility and experience required to conduct the workshops successfully.

3.1.3 Targeted Email Messaging

Thirdly, targeted email messages were sent to teachers. The first of these 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 4 to 6 months) were 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) distributing bills through the inbox, (d) creating artifacts with students: composing, and (e) creating artifacts with students: practicing. The targeted messaging is in keeping with approaches used by other 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.

3.1.4 Studio Visits

Twenty studios have been identified to take part in a one-year study on iSCORE, which began in September 2012. Half of the teachers in the study will use iSCORE with their students; the remaining 10 teachers will continue to teach in the same manner as before. The 10 pairs of teachers are matched in terms of geography, years of experience, and instrument/genre.

As part of the one-year study, the 10 teachers receiving iSCORE for their studios will also receive one-on-one training in their studios. Two researchers (a faculty member and a graduate student) are assigned to each studio. Working directly with the teachers, the researchers will introduce iSCORE and tailor it specifically to each teacher's needs, thereby tailoring both content knowledge and pedagogical knowledge to each context. Findings from the present study have guided the format and content for the professional development for the studio visits, in addition to the directions suggested through the research literature. Thus, through the course of the studio visits, the researchers will interview teachers regarding their pedagogical practices, so as to refine the professional development to address the nuances of their students' learning, particular challenges and misconceptions students might face, and to tailor strategies for helping students overcome learning hurdles.

Each teacher will have two studio visits in the fall, a studio visit in the spring, and regular contact through email with the researchers. The effectiveness of the studio visit model as a form of professional development will be analysed in the summer of 2013.

3.2 Assessing the Effectiveness of the First Three Types of Strategies

In order to assess the effectiveness of the first three forms of professional development support, we conducted formal and informal interviews with individuals and groups associated with the iSCORE project.

A group of four iSCORE teacher advisors were directly involved in developing and assessing the professional development tools. The teachers were interviewed in the spring of 2012, four months after the tool was released. Two of these teachers also took part in a two-day session six months after the tool was released with two researchers. The two-day session involved debriefing of the professional development, as well as planning new strategies. These four teacher advisors also contributed to the design and beta-testing of iSCORE before its public release. In addition, we sought feedback from new iSCORE users, including those who participated in webinars and/or workshop after the tool was released.

We also gleaned valuable information from a Student Advisory Committee, comprised of student iSCORE users ranging from 12 to 22 years of age. Finally, we conducted group interviews with the iSCORE Advisory Board, a group of close to 30 members representing teacher associations, music publishing, the business sector, independent teachers, software designers and developers, and

educational institutions. In each case, the overarching question for the individual and group consultations was, “How can we engage teachers, students, and parents to use iSCORE?”

4 ANALYSIS

We ascertained the success of the first three approaches (embedded tools, workshops, targeted messaging) by examining feedback from teachers, students, designers and developers, publishers and other stakeholders, as well as through an analysis of the uptake of iSCORE by students and their teachers. Based on teacher and student experiences, the advisory group offered further suggestions for engaging teachers through professional development.

4.1 Student Uptake

The Student Advisory Committee—formed of active iSCORE users—identified what they called the “top ten” reasons to use iSCORE. 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 yours 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 intro 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.

Student comments indicate 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/confidence) and that they found the tool both attractive and accessible. These findings are germane for developing further professional development for teachers.

4.2 Teacher Uptake

There was clear evidence that the face-to-face workshops, webinars, and other forms of personalized instruction, including the studio visits to date, 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 able to imagine how to incorporate the tool into their studio practices. Several teachers commented on the fact that this was an important form of

professional support in an otherwise lonely and isolated teaching context, as reflected in the comment below:

Thank you very much for your webinar today. 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 efficiently and 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 for teacher-to-teacher mentoring. As iSCORE continues to be disseminated to teachers, we will look to teacher mentors to assist with the professional development training.

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.

4.3 Stakeholder views

In addition to the data collected through independent music teachers and their students, we sought input through a full-day advisory session, eight months after the software was released. There were four small group discussions (6–8 members per group). The groups were comprised of teachers (both experienced and new iSCORE users), educators, publishers, academics, software designers and developers, and representatives from business and industry. The groups responded to questions about how to enhance professional development for iSCORE users, and the analysis of the group discussions revealed five common themes, 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 of, “Will using iSCORE take more time?”
2. **Videos**—provide a series of short, upbeat, student-centered, 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 more 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.

5 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. 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. The one-year study that is currently underway with 20 independent teachers will provide a context for assessing the effects of professional development over time and the features that contribute to successful engagement on the part of teachers and their students.

While we can report, with confidence, early success for the professional development that took place with teachers involved in webinars and workshops, it nevertheless remains the case that only a small proportion of teachers elected to take these workshops. Many teachers have complex schedules that make these forms of professional development difficult or impossible. Thus, an ongoing challenge for the widespread dissemination of the tool will be to continue to develop ways of reaching more teachers effectively so that they and their students might also benefit from iSCORE. 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."

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 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 to be supported, through various forms of professional development, in order to embrace the dream of transforming music education. If such a transformation is successful, then students who choose to learn to play an instrument will achieve sufficient mastery to be able to enjoy music-making throughout their lives.

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