Incorporating Technology into Teaching Music

By Dan Massoth

Dan Massoth recently taught instrumental music in the Osseo (Minn.) School District and is currently doing graduate work at the University of Minnesota. Prior to teaching in Osseo, Dan taught elementary and middle school band in the Wayzata School District.

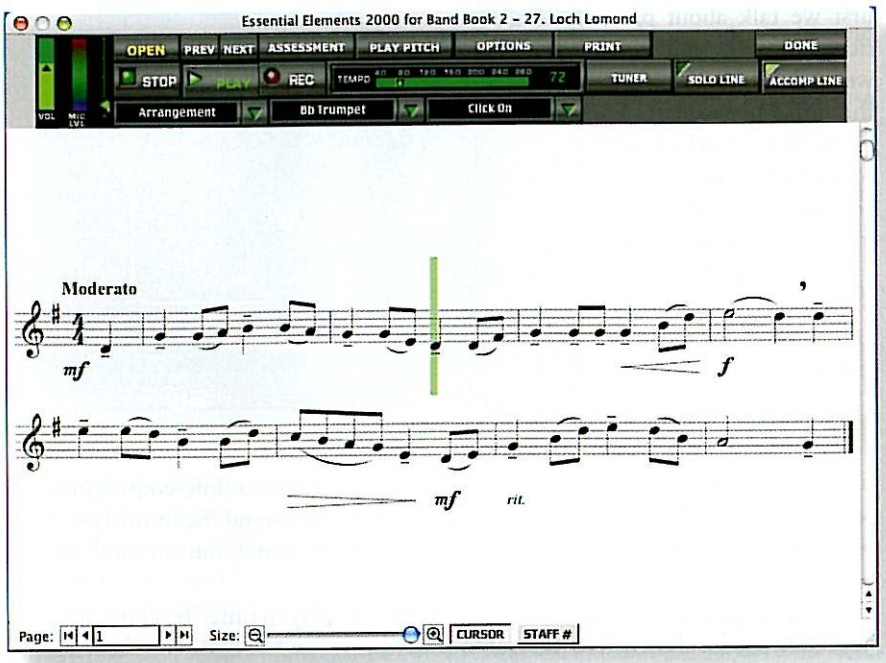
Dan is a frequent consultant to MakeMusic – Coda Music Technologies and also serves as Technology chair on the MMEA board.

Remember when using technology in a music classroom created more problems than it solved? If it wasn't the hours spent consulting the manual, it was the fragility of the MIDI connection, the slow speed of the computer, or a perplexing software conflict. Today many of those previously prickly issues have been resolved. Technology can be a powerful tool in the learning process, and is starting to become a reality in many of our classrooms. In this article I'll explain a few of the ways that I use technology in my teaching. The learning curve isn't too steep, and I've found that the benefit to my students and my program has been well worth the time and effort.

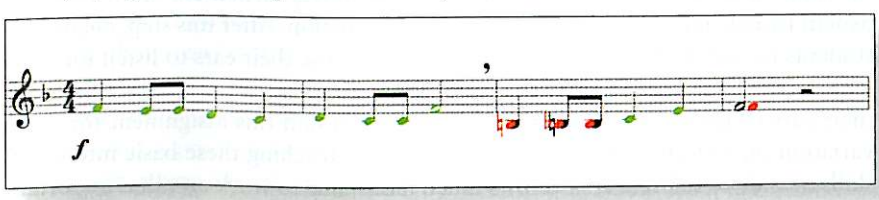
Using Technology to Help Teach Musical Skills

I have always believed more students would continue making music if they could spend more time playing with a full-ensemble than practicing alone; students are more motivated to perfect skills in a group situation. While technology cannot replace every aspect of making music in an ensemble, a computer and a good set of speakers can replicate much of the experience and even help improve an individual student's musical skills.

When most students practice at home, they are typically missing both a rhythmic and pitch reference. We've all had those students who come to a lesson and proclaim that they had no problems playing a song at home, but at school "everybody else is messing me up." After correcting their counting, this problem is usually solved. Again, it all comes back to needing a pitch and rhythmic reference. Without accompaniment, home practice time can yield fewer positive results.



For many years now, I have incorporated a software program called SmartMusic into my curriculum. There are accompaniment tapes and CDs and other accompaniment software programs available, but SmartMusic has a number of useful tools and resources to offer students at any level. It includes most of the well-known beginning string and band methods, so students can practice at home with accompaniment. This music is displayed on-screen, and a green cursor highlights each note as it is played. Students can slow down the accompaniment and add a metronome click to help with learning rhythms. The solo part (the melody that the student is assigned) can be heard independently so students can check to be sure that they are playing the correct pitches. There is even an assessment component to the beginning method section of the application. Notes and rhythms that are played correctly by the student are displayed in green, while incorrect notes and rhythms appear in red. In this manner, students can now receive feedback at home and don't have to wait for the next lesson to learn that they have been playing a note or rhythm incorrectly all week.

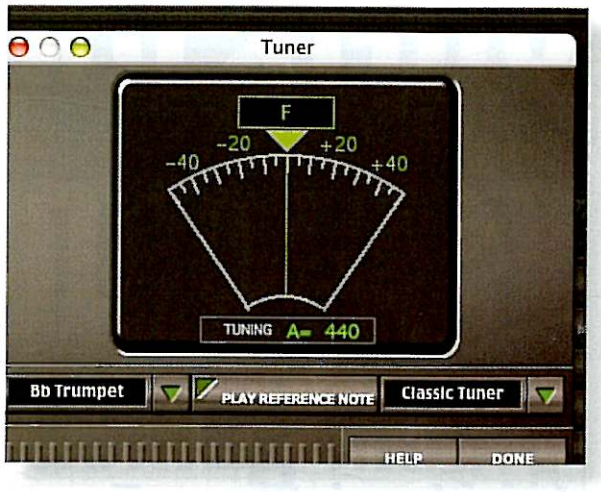


As my students begin working on solos for competition, I also use SmartMusic to help them prepare. I have always thought that composers would cringe if they knew that student performers of their pieces only heard the complete work the week before competition, and then maybe for only one rehearsal before the final performance! So much great solo literature relies on the interplay between the solo and the accompaniment; to practice the solo part in isolation and not be aware of the total work is unfortunate. When a student has mastered the basic counting and pitches, it is time to play it with the software accompaniment. This early exposure helps the student learn the style of the piece and helps shape the interpretation of the work. When the first rehearsal with the pianist arrives, the student has developed an understanding of the whole composition and isn't surprised to hear the accompaniment for the first time. Students are less nervous at competition because they have heard and practiced with the accompaniment many times. The end result is student performances that reflect a much higher level of musicianship and accomplishment. Isn't that what we're looking for?

Slow Down!

Teaching good practice skills is a big part of what we do as music educators. As we know, most beginners are impatient and tend not to want to learn a song by starting slowly and gradually increasing the tempo. Using SmartMusic during class is an effective way for me to reinforce good practice habits. All the music for each method book as well as many more exercises, like scales and arpeggios, is displayed on the screen. Though this music can be displayed on the screen, most of my classes are heterogeneous groups, so we look at our books.

Most classes learn to practice in a similar way: first we talk about practicing slowly, and then we talk about isolating the difficult passages. After we have worked on a song or exercise, we'll record one or all of us playing. There's nothing like a recording to keep track of our accomplishments and to pinpoint what we still need to work on.



Tune It or Die

Learning intonation skills in a large ensemble setting is a time-consuming process. For each student to be able to recognize and understand the intonation characteristics of his or her instrument and to be able to match unisons and octaves requires a substantial effort.

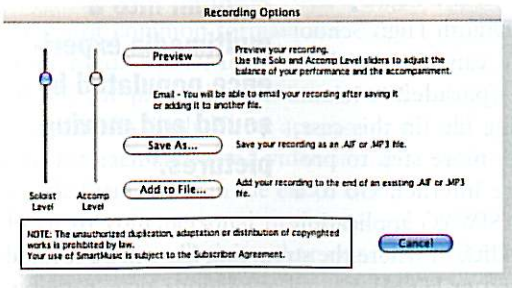
Technology can also help students learn how to play in tune. Teaching students how to listen for destructive interference or "beats" can be done in rehearsal, but then they need time to practice this skill. The tuners available in programs such as SmartMusic are wonderful tools designed for just this purpose. Essentially the SmartMusic tuner is a standard chromatic tuner, but it also can provide a "reference note." This is the same note being played by the student; only it is played back through the computer's speakers – in tune.

For a practical application of this technology, consider giving your students the following assignment that I have given to my ninth grade band students for the past two years: Play a major or chromatic scale "in tune" with the reference note on SmartMusic's (or whatever program you choose to use) tuner. To teach this unit, first teach basic physics of sound so students can adjust their instruments to be longer or shorter. Then cover, by instrument, the function of embouchure, hand position, throat position, air speed/ direction, adjustable slides or covering additional keys/holes. This is also a great opportunity to teach students the importance of having warmed up the instrument and themselves. Next, demonstrate the learning process by playing a scale and looking at the tuner. Then, do the same with the reference note (as described above) turned on. Students really benefit from being able to see and hear their intonation. After this step, encourage students to start looking away from the tuner and use their ears to listen for intonation. The final step is to play the scale without looking at the tuner – using only their ears to listen for pitch. I think that you will find this assignment (or some variation on it) to be valuable for your students. Teaching these basic intonation skills outside of full rehearsal allows much more time to work on other important ensemble issues.

Curriculum Integration

In the past, incorporating technology into your curriculum has been challenging. Today, however, we have many more options at our disposal. Here are some ideas of how to use technology across an entire grade level or ensemble:

- Have each student work on the same solo.
- Transpose a song for a whole ensemble and hand it out to each student. Work on it in full ensemble and, at the conclusion of the unit, test on an unannounced section of the work.
- Have students learn scales. After all, we all know that scales are more interesting with accompaniment.
- Use accompaniment when working out of a method book. Unison songs are great for building all kinds of ensemble skills, and incorporating accompaniment at the conclusion of the learning process will bring it to the next level.
- Build technique with accompanied exercises. Intervals, arpeggios, and general technique exercises are more fun this way, and the learning process of starting slowing and building up speed by using a metronome is embedded in the activity.



Hearing is Believing

Having a quick and easy way to record an ensemble or single student can change the way that we teach. No longer do we have to explain what we heard. Just make a recording and have students listen to what they just played. Wow! Nothing can be more sobering to students than holding up the "musical mirror" of their own sounds.

There was a point in my own musical career when one of my private teachers encouraged me to make recordings of my practice sessions. When I finally did get around to completing the assignment, I was amazed to hear the details that I had been missing. Making recordings helps us develop our students' ears. My students and I have a lot of fun in rehearsal recording ourselves. Sometimes we record the full ensemble, or a section, or just a soloist. Attacks, tuning, and balance issues are more efficiently discussed when there is a recording to listen to. Saving a recording of the first or second time through a piece for later playback can demonstrate a group's growth and build confidence like no speech or pep talk.

Now that many of my students use SmartMusic at home, we have an easy way to make and send recordings from home to school and back. This has been a wonderful new window into the learning process. Occasionally, I'll ask students to send in a recording of what they have been practicing at home. The process of making these recordings is a great experience; students will often record selections many times until they are happy with what they are sending in. These kinds of goal-driven and results-oriented assignments make up the building blocks that encourage and demonstrate progress.

One specific example of the use of this technology is making audition recordings. In the fall, several students will audition for a state honors group. Each student is required to send in a tape or CD with recordings of scales and excerpts. The making of these CDs used to take an incredible amount of time. Now, I'll work with students on perfecting their selections at school and then send them home to make recordings. As recordings come in, the excellent performances are saved to a folder and the less-than-excellent recordings receive feedback on a return e-mail. During a follow-up session with a student, our time is spent working on the music, building on what we learned from the first few recordings. More time is spent teaching and less time pressing record!

Portfolios continue to be a common buzzword in the field of education. While music has always been one of the most outcome-oriented subjects taught, we have lagged behind in the visual demonstration of progress in an aural discipline. Recordings of a student's progress throughout the year can be a great first step for us to close that gap. Having students test at school and send in assignments from home allows for the creation of portfolios that document a student's progress and achievements throughout the year. So much of our students' accomplishments simply disappear after an event or performance. A CD portfolio of each student's work is a physical demonstration and remembrance of their work.

In Summary

Technology can help us extend our classroom so our students can have more meaningful and effective learning experiences. As teachers, there may come a day when technology is an integral part of everything we teach. It is up to us to steer ourselves – and our student – in that direction.