

Using Tablets for Individual Assessment in Musical Ensembles

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Many school districts are looking to digital textbooks as a way to cut costs while improving student learning. These digital textbooks are interactive and offer many features that allow real-time individual feedback and assessment.

Music publishers are beginning to follow in this digital direction. We started piloting a program to use iPads for digital sheet music in our classrooms. The advantages to using digital sheet music are numerous. Among them are

- Not having to replace damaged copies of music
- Being able to purchase music at a lower cost
- Having the ability to record individual students during rehearsals while the entire ensemble is singing
- Having the ability to record students at home
- Being able to embed recordings of professional musicians performing the students' parts, thereby demonstrating proper tone, diction, musicality, articulation, pitch, rhythm, and support.
- Being able to share music efficiently and quickly with students
- Saving valuable storage space currently being occupied by thousands of scores in closets, drawers, and cabinets.
- Hearing far more nuances in individual parts than ever before, and being able to let the students hear themselves

While we have certainly made a lot of mistakes and adjustments along the way, we feel as though we have learned many important lessons that can help you as you enter the digital territory. Many districts are implementing a tablet-based program for textbooks, so if nothing else, it is better to be prepared to use this technology to your advantage if that happens in yours.

How Do I Start?

1. Digitize Your Existing Music Library
 - a. Scan to high quality PDF format
 - b. 300-600 dpi (dots per square inch) resolution
 - c. Count how many copies you have
 - i. It is legal to have an electronic copy for every paper copy as backup
 - d. We recommend using a company, as they:
 - i. Remove staples
 - ii. Cut center fold out
 - iii. High speed scan
 - iv. Name the PDF file with title and composer
 - v. Cost is around \$1 per piece of music

2. Procure iPad or tablets
 - a. Funding
 - i. Technology Education Grants (google this term for hundreds of resources).
 - ii. School Districts (may be moving to a 1:1 program for textbooks)
 - iii. Booster Clubs
 - iv. Student Fees/ Activity Fees
 - v. How we did it:

Costs

40 iPads	\$19,920
iPad Charging Carts	<u>\$ 2,400</u>
<i>Total Cost</i>	<i>\$22,320</i>

Income and Savings over 2 years

10 percent savings of sheet music cost	\$ 1,000
Savings on shipping costs	\$ 500
Student Rental Fees (150 fees of \$43 each for 2 years)	<u>\$12,900</u>
<i>Total Savings and Income</i>	<i>\$14,400</i>

Total Needed from School or Grants: \$7,920

Briarcrest was willing to cover this amount, but it turns out that because of growth in the program (we will have about 210 students next year), the net amount to be covered will be even less than that. If we could not have found money to cover the last amount, we could have spread the rental fees out to three years and fully covered the cost.

3. Implementing in Your Classroom
 - a. Find the right app
 - i. If you are going to load in existing printed music, use an app that supports import via PDF. We use “UnReal Book” but other apps are out there that could work- GoodReader, forScore, and museScore are all ones we tested and considered.
 - ii. If you don’t need to load in printed music, you could use an app from digital sheet music sites like MusicNotes.com or OnlineSheetMusic.com. Just know that the only music you will be able to use is that purchased from the respective online retailer.
 - b. Load music onto the iPads
 - i. If you are using existing printed music PDFs, you will have to use the iTunes document transfer interface. It must be done one iPad at a time, which is slow and not ideal. This is what we must do with unreal book.

- ii. However, a better option after the initial loading of music is to set up the same e-mail address on each iPad, use permissions to prohibit sending of e-mails, and send new scores to that e-mail address when you are ready to use them. Students open up the e-mail on their iPad, hit “Open in unreal book” and pull it into a playlist.
 - iii. One more option is to share a playlist via DropBox. This option is supported by a few apps including unreal book.
 - iv. Setup a music list for each ensemble. This varies from app to app.
 - v. If you are using the same piece in multiple ensembles, create individual PDF files for each ensemble before you load it onto tablets. For example, ForTheBeautyofTheEarthConcert.pdf and ForTheBeautyofTheEarthChamber.pdf. If you do not, each student’s markings will show up on other’s copies.
 - vi. Use a syncing cart instead of just a charging cart. It is well worth the initial investment.
- c. Use Permissions, Always
- i. I cannot stress enough how important it is to have permissions set on your iPads or tablets. For iPads, Go to Settings—General—Permissions to set these. I recommend disabling everything.
 - ii. The only way to truly “lock down” an iPad is by using Apple Configurator. However, it is very tricky and at this point, I don’t recommend it unless you have a lot of time and a full time IT person at your school to help.
- d. Get good cases
- i. Hand straps are helpful
 - ii. Drop and spill protection a must
 - iii. I recommend the Griffin Air Strap
<http://store.griffintechology.com/airstrap>
- e. Set procedures and be consistent about them
- i. Take the tablet out of assigned slot.
 - ii. Clean screen using provided cleaner and wipe if needed (we do this on Fridays only)
 - iii. Keep tablet to your side during warmups
 - iv. At the end of class, tablet must be placed in assigned slot and plugged back in with proper cable
 - v. Students can either use headphones or the built in speaker to listen. Headphones are easy and very cheap.
 - vi. Battery life tends to be about 8-12 hours of use on one charge, depending on the device when using sheet music.

4. Assessing in real-time in class
 - a. Teach everyone how to use the app's record feature. Make sure everyone is comfortable with it.
 - b. Be sure students are consistent with how they name the file of the recording. For example, our students know to do "Last Name_First Initial_Date".
 - c. Have students all record one excerpt together with tablet in front of their faces. It will pick up 90 percent of them and 10 percent of the ambient sound from the other singers.
EXAMPLE
 - d. No interruption of classroom time is necessary.
 - e. Do a combination of "pop quizzes" and planned tests over assigned sections of music.
 - f. Be specific about the assignment and expectations
 - i. Example- On Friday, you will be asked to sing measures 16-32 of Handel's "Praise the Lord". I will be specifically be listening for appropriate staccato articulation where marked, dynamic contrast as marked, and note and rhythm accuracy.
 - g. Use a grading rubric so expectations are understood and consistent. This will also allow you to track student progress over time in areas like tone, vowels, diction, blend, tonging, articulation, etc.
 - h. Right now, without a cloud-based or e-mail enabled recording app, the best way we have found to give students feedback from their recordings is to listen on each tablet and then make your own recording with spoken comments.
 - i. Allow students to review their recording and give them a second chance to record. This is one of the most valuable parts of the process.
 - j. Use built in metronome and pitch pipe to increase level of student competence in small group and sectional settings
5. Assigning homework and study aids
 - a. I use a combination of YouTube, MIDI files, and ChoralTracks and embed links to recordings of parts in the scores. This allows students to hear quality or at least accurate examples of what their part should sound like.
EXAMPLE
 - b. Assign sections of music for students to record.
 - c. Create listening assignments.
 - d. Use apps like Tenuto to drill theory, key signatures, intervals, etc.
6. Using the highlighting and drawing tool
 - a. Students seem enjoy using the writing tool much more than they enjoy using their pencils on real music to make notes.

- b. Set a system for expectations. For example, I have my students highlight dynamics in one color, articulations in another, and mark problematic areas with a red circle. This is a habit that over time just happens every time they open up a piece of music.
- c. You will be surprised at how much more students make meaningful markings on the music—and be amused (annoyed) at the colorful pictures you get from time to time.

After almost a full year of using tablets for our music, we still have much to learn and improve. Additionally, the industry for digital sheet music is immature, so some helpful functions are still missing. Here's a partial list of what we would still like to see:

- A cloud-based sheet music distribution app that could be administered from a single computer or tablet to multiple tablets in lists.
- A cloud-based recording function in the sheet music application.
- An easier way to load music onto the tablets.
- Better integration of digital sheet music sites and existing PDFs
- More powerful, easier-to-use permissions

Digital Music Websites

www.sheetmusicdirect.us (No App, Print only)

www.musicnotes.com (App, Print Only)

www.onlinesheetmusic.com (App, Print Only)

www.cadenzaone.com (No App, Print or Save to PDF)

www.jwpepper.com (No app, print only)

www.sheetmusicplus.com (No app, print only)

Please feel free to contact me with any questions:

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