

IPad Apps for the Music Theory Classroom

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Many educators seem to agree that iPads are quickly becoming a valuable asset in the classroom, both as a teaching and administrative tool. However, are there pedagogically sound apps available for use in a music theory classroom; and more importantly, how can these apps be integrated into class to promote superior learning? In response to the first question, many good apps are available for theory, almost too many. Because of this surplus of apps, it can be a daunting task to choose which apps will work best for an individual classroom. In this article, I will highlight a number of apps that promote superior student learning and share some strategies for choosing and integrating apps into your classroom.*

Why Incorporate iPads Into Your Class?

Rote learning of fundamental theory concepts can be exceptionally tedious and disheartening for students, especially for those college level students who wish to delve deeper into the meaning of the music that they love (as opposed to learning exactly why that $\hat{7}$ wants to resolve to $\hat{1}$ in some obscure Mozart piano sonata). Unfortunately, the nature of traditional analysis and part writing lends itself easily to learning by rote (e.g. identify this many borrowed chords, resolve that many secondary chords, etc.). Of course, there is already an infinite amount of creative in-class activities and take-home

* It should be noted that this article is not intended to describe a comprehensive review of implementation strategies for the iPad in a music theory classroom, nor to only offer a short list of what I consider to be very useful apps, but to give examples of how the iPad can be used in many facets of a theory curriculum in order to improve student learning, and to also give advice in choosing the right apps for your class.

assignments that can allow greater student learning and lessen the monotony of the first few years of a student's high school and undergraduate theory classes, but the iPad can easily add a layer of interest and variety to a teacher's lesson plan.

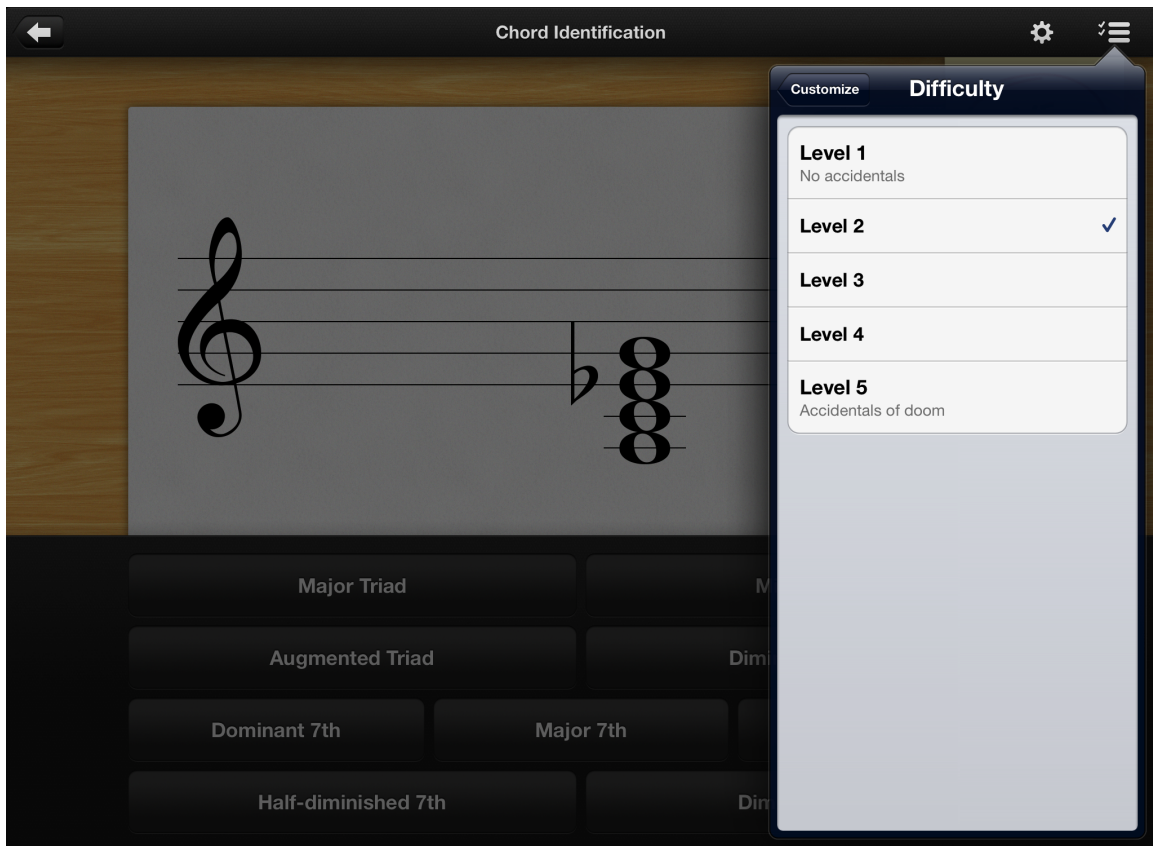
The iPad has multiple uses in a theory curriculum: it can be the center of a classroom activity in which every student uses or shares an iPad, students could be allowed to sign out iPads for independent practice, or a teacher could even use a single iPad for any number of uses while teaching a class (e.g. using a keyboard app to play examples, a tuner app to check pitches, etc.). The iPad's usefulness is definitely rooted in the variety of apps one can download, of which new apps are created every day. iPads are easy to use, fun for students, and can be used for almost any pedagogical purpose. Not only that, but the tests and quizzes available on many theory-based apps include instant feedback, which allows students to test their understanding of a concept without having to wait for the next class period.

An App for Student Practice

There are many apps that can help students master basic and fundamental concepts, but one that has proven to be most effective is Tenuto by Musictheory.net. Tenuto is an easy to use program that allows students to test themselves on various concepts, containing a vast library of reference tools for beginner and advanced learners. It can be extremely useful in both early college and high school theory classes. The strength of this program is in its ease of use coupled with in-depth difficulty settings. For example, there are five levels of difficulty in chord identification (as seen in Fig. 1), which scale from level 1 ("no accidentals"), to level 5 ("accidentals of doom"). This high level of customization can be exceptionally helpful for teachers who wish to integrate the

app into their syllabi (e.g. students begin at the “no accidentals” level during the first week, and progress to the “accidentals of doom” level during the fifth week).

Figure 1



There are also multiple subsets of difficulty that can be customized to fit a student’s individual needs (clefs, range, key signatures, types of chords to identify, and inversions). Chord identification is just one exercise of this app, but each exercise is just as customizable. Other exercises and features include interval identification/calculator, key signature identification, note identification, chord calculator, and many more (including interval, scale, and chord ear training tests, identifications for keyboard and fretboard, and a twelve-tone matrix calculator). While this app does favor fundamental

practice over more contextual musical application of those fundamentals and advanced theory topics, there are some features that can be used in higher-level theory classes to check work, such as the analysis and 12-tone matrix calculators.

The ironic aspect of this app is that while Tenuto works well, it goes against my earlier statement that many students find rote learning to be tedious. Even though it is an iPad app, its identification exercises are essentially rote tests. However, because of the mixture of an exciting piece of touchscreen technology, instant feedback, and the fact that the app can cater to a student's individual needs, students love to use it for practice. They treat it more like a game and less like a quiz, and if students are allowed to use the iPads outside of class, they will get much more practice than simply completing exercises out of a workbook. While there are many more apps that test the fundamentals of music theory (Music Theory Pro, Music Tutor, and Nota to name a few), Tenuto is the app that my students use most frequently in my own class. It should also be noted that all Musictheory.net apps are available for free if accessed from their website of the same name; meaning that if you can't afford the app for all of your iPads (\$3.99 per installation) but your school has wireless Internet, you can still access all the features of the apps.

An App for Student Reference

While it is difficult to find apps that test the application of theoretical concepts (like contextual analysis and part-writing), there are many music apps that can be used for in-class activities as well as out-of-class study. For starters, there are a few that consist of interactive lessons that follow a progression similar to a textbook. The most notable of these is Theory Lessons by the same developer that created Tenuto (there is

also a similar app called Music Theory and Practice by Musicopoulos that could be good for early theory classes). While I would never advise a teacher to replace the textbook with a \$2.99 iPad app, it can be used as an easy-to-use reference tool for students. Theory Lessons has a very similar layout as Tenuto, but instead consists of individual lessons that span from basic theory to intermediate concepts and guided analysis; the sections of which include The Basics, Rhythm and Meter, Scales and Key Signatures, Intervals, Chords, Diatonic Chords, Chord Progressions, and Neapolitan Chords. Each lesson contains a step-by-step explanation of the concepts accompanied by animated and audio examples. The app even includes three guided analyses of musical excerpts (one of which is shown in Fig. 2). My only issue with the program is that the lessons stop abruptly at the building and analysis of Neapolitan chords and do not delve into other types of chromatic chords, though I hope more lessons are added in the future.

Figure 2

< Analysis: O Canada i

E♭ [I V⁶ vi V I IV⁶ I⁶ IV V

- Analyzing the notes and chords of a song is a major part of music theory.
- In this analysis, we will be looking at the first four measures of *O Canada!*, the national anthem of Canada.
- The first step in analysis is to determine the key. Since the key signature contains three flats, we have two possibilities: E♭ major or C minor.
- The first chord contains an E♭, B♭, E♭, and G - an E♭ major triad. Since this is I in E♭ Major, we are most likely in that key.
- The second chord contains a D, B♭, F, and B♭ - a B♭ major triad. This is V in E♭ Major. Since the third is the lowest note, the triad is in first inversion.
- Since the third chord is the same as the previous one, we do not have to repeat the analysis symbol.
- The first chord of the second measure contains a C, G, C, and E♭ - a C minor triad. Thus, it is vi.
- The second chord contains a B♭, B♭, D, and F - another B♭ major triad. This time, it is in root position.
- The first chord of the third measure contains an E♭, B♭, E♭, and G - an E♭ major triad. Thus, it is another I chord.
- The second chord contains a C, A♭, E♭, and A♭ - an A♭ major triad in first inversion.
- The third chord contains a G, G, E♭, and B♭ - an E♭ major triad in first inversion.
- The fourth chord contains an A♭, C, E♭, and C - another A♭ major triad. Notice that it is now in root position.
- The final measure contains a B♭, B♭, D, and F - a B♭ major triad. Thus, we end with a V.

🔊 Listen to these measures of *O Canada!*

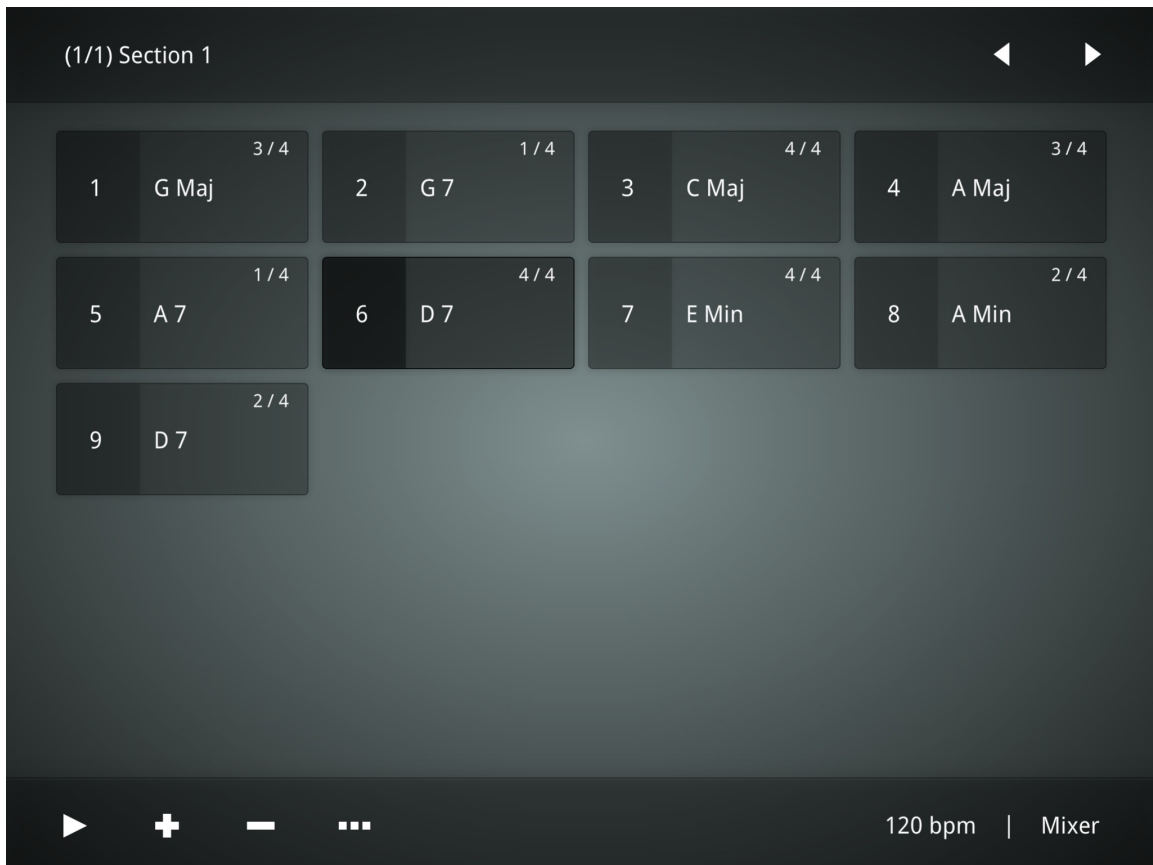
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Apps for Classroom Activities

As for in-class activities, if you have enough iPads to go around (or to share) there are multiple possibilities for collaboration. Chordbot by Lars Careliusson (Fig. 3) is a program that allows the user to set up unique chord progressions that can play back a loop in different styles, tempos, and time signatures of the user's choice (and is also a

favorite of my students). Even though the app builds its progressions with pop chords instead of Roman numerals, it is a great way to connect the aural and written aspects of analysis. For instance, the students can be asked to compose a five-chord progression on Chordbot with at least one secondary dominant, and then asked to notate the progression on a sheet of staff paper and analyze it with Roman numerals (or, depending on what the students are comfortable with, notate it on staff paper and then input into Chordbot). This activity will enable the students to see and hear the function of the secondary dominant, while also indicating whether or not the students understand how the roman numerals relate to the pop chords.

Figure 3



Using the iPad as a portable keyboard is also a great resource for in-class activities. There are many keyboards to choose from, but the one I use with my own class is Virtuoso Piano by Peterb (there is not much difference between the current piano apps, but the main attribute I look for is quality of sound and keyboard response). While no one will ever sound like a concert pianist with these apps, students love to use it for in-class activities. The educational possibilities for each student having their own portable keyboard are numerous, but let's take the previous secondary dominant activity as another example. Let's say that the students have already composed their original progressions with the Chordbot app and notated the pitches on staff paper. The next step could be for the students to pair up and compose a simple melody using their partner's progression, and then perform the melody alongside Chordbot's playback feature (they could also put on the performances individually, since Chordbot's playback function will continue even if the program is running in the background). Having students perform a composed melody will even further reinforce the function of the secondary dominant, especially if they are required to place the leading tone in the melody. The instructor can then take it a step further by placing parameters on the melody that reinforce concepts from previous lessons, like the correct usage of non-chord tones and voice-leading principles. There are also many keyboard apps like Alchemy Synth Mobile by Camel Audio that allow the user to change and manipulate the MIDI sounds for the keyboard, giving your students a little more variety for their mini-compositions.

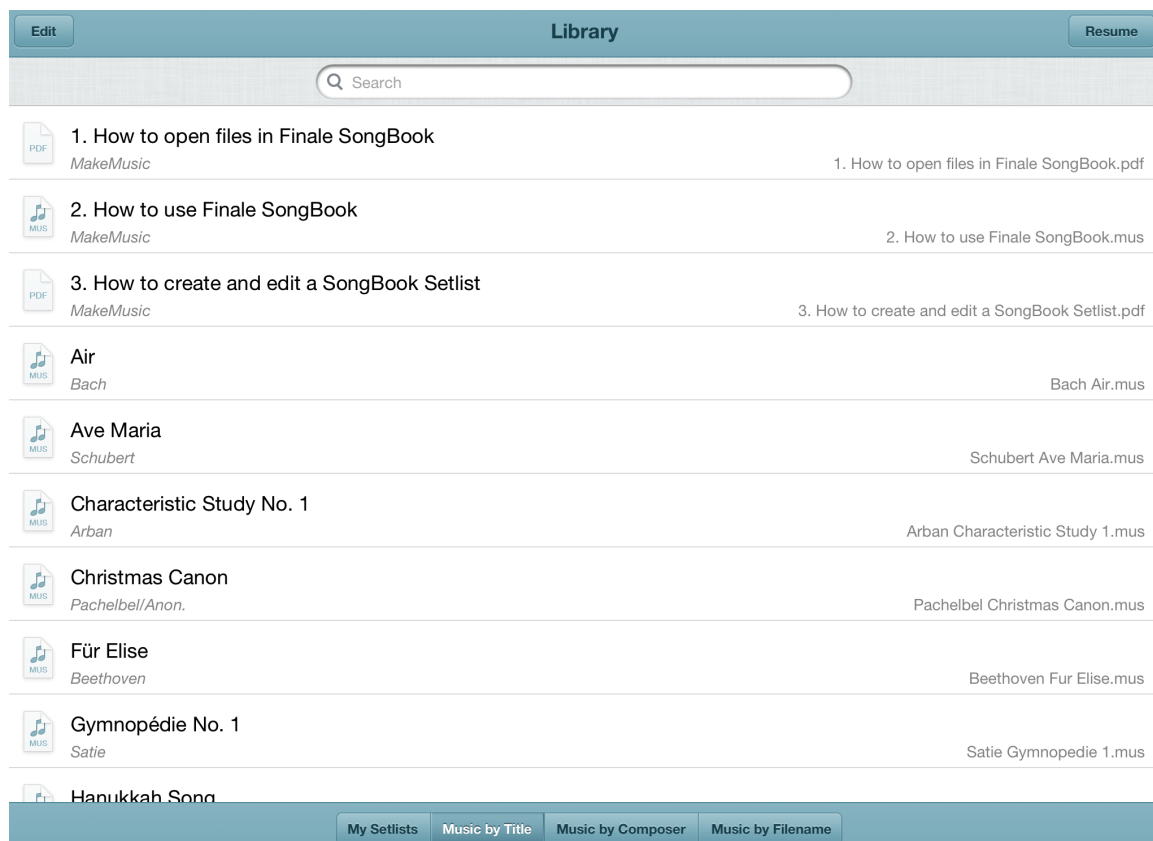
Only Have One iPad?

Not every college or high school music program can afford an entire classroom worth of iPads. Even so, having only a single iPad can be helpful for a teacher in many

different ways. For starters, any of the aforementioned apps can be used for in-class activities by connecting an iPad to a projector. A class can divide into teams to compete to see who can aurally identify the most seventh chord qualities using Tenuto, or they can work together to create a functional chord progression while utilizing proper inversions with Chordbot. Connecting an iPad to a projector (and preferably a sound system as well) will allow the whole class to participate in activities with the use of only one iPad.

There are also many apps that can help facilitate a teacher's more tedious jobs. One of the more useful apps for any teacher is called TeacherKit by ITWorx. This free app is an organizational tool that is a grade book, roster, and attendance sheet all in one (which is good for keeping track of unusually large classrooms or multiple classes at a time). Another useful app for teachers who use Finale with their class is called Finale Songbook by MakeMusic, Inc (Fig. 4). This app allows the teacher to view Finale (.mus) files with the iPad and also listen to them. While you can't make edits to the file in this app, it can be useful for grading homework assignments when a computer is not readily available. Additionally, there is a similar app called Avid Scorch by Avid that can be used to view Sibelius (.sib) files.

Figure 4



Other apps available for download have numerous uses as “just in case you need it” apps. There can always be instructional and practical uses for a tuner, metronome, touch drum kit, or the touch keyboard; and the most enticing feature of each of these apps is that most of them are available for free. Of course, you could always use your sole iPad to let your weaker students practice their theory with the exercise apps like Tenuto or Music Theory Pro.

Tips for Choosing the Right App

The apps mentioned here are just a fraction of those currently available, and with new apps being developed every day, there will soon be even more. With so many apps to choose from, my main tip to other instructors would be to test each app before installing them on all of your iPads. I have downloaded many apps that look amazing when viewed in the App Store, but end up being buggy or lacking in features. Some apps

advertise themselves as free, but when downloaded, require multiple paid add-ons before the app can be used for its purpose (add-ons that usually cost more than most stand-alone apps). For example, there is an app called Music Theory Tutorials that is free in the app store, but for the app to be useful you would have to pay \$10 for each add-on (which adds up to be \$40 for the entire package). This statement is not to diminish the possible usefulness of the app, but to highlight how expensive some of these apps can get. On a similar note, while the App Store reviews are a fairly good measure of quality, I've downloaded some with less than favorable reviews that turned out to be extremely useful.

Furthermore, price does not always rise alongside quality. I have found many apps that promise the world (and cost about as much), but are ultimately bogged down by bugs and confusing user-interfaces. It is surprising how much can be done only with free apps, or with a single app that costs \$3 to \$5. In the same vein, it would be beneficial to find a single app with many functions rather than multiple apps with single functions. For instance, Tenuto does for \$3.99 what five or six other apps can do together at 99¢ apiece because of its numerous quizzes and reference tools. Also, just like the online versions of Tenuto and Theory Lessons, there are theory websites that fully support mobile devices. Sites like Teoria.com and Gmajormusictheory.org have lessons and exercises similar to the apps available through the App Store, though a continuous Internet connection is required (whereas an app that is installed on the iPad can be accessed anywhere by a student).

With iPad technology only having been around for a few years, its educational uses (even with the apps that have already been developed) have barely been realized. In the future, it would be exciting to see iPad labs in as many high schools and colleges as

computer labs; especially since, as of right now, it is extremely expensive to buy an entire class worth of iPads for a single class. However, it is a great investment; and with developers continuously developing more useful and creative educational apps, there's no telling what iPads will eventually be capable of in terms of music theory pedagogy.

Apps Mentioned in this Article (prices as of April 2014)

<u>Name</u>	<u>Developer</u>	<u>General Use</u>	<u>Price</u>
Tenuto	Musictheory.net	Theory and Aural Skills Exercises/Quizzes	\$3.99
Music Theory Pro	Joel Clifft	Theory and Aural Skills Exercises/Quizzes	\$4.99
Music Tutor	JSplash Apps	Learn note names on Treble and Bass clef	\$1.99
Nota	All Forces	Reference tool for notes, chords, and scales. Includes reference dictionary and note naming quiz	\$2.99
Theory Lessons	Musictheory.net	Interactive lessons on basic and fundamental theory with some guided analysis	\$2.99
Music Theory and Practice by Musicopoulos	SpartanApps	Fundamental theory lessons and quizzes	\$2.99
Chordbot	Lars Careliusson	Loops chord progressions with pop chords	\$4.99 (lite version free)
Virtuoso Piano	Peterb	Virtual touch keyboard	Free (in-app purchases available)
Alchemy Synth Mobile	Camel Audio	Virtual touch synthesizer	Free (in-app purchases available)
TeacherKit	ITWorx	Classroom organizational tool	Free

Finale Songbook	MakeMusic, Inc	View Finale (.mus) files on your iPad	Free
Avid Scorch	Avid	View Sibelius (.sib) files on your iPad	\$1.99