

The Applied Music Studio: Teaching Students With Special Needs

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ABSTRACT: With recent advances in technology, it is essential that music educators become knowledgeable of various software programs that could assist in the teaching of students with special needs in applied music lessons. Computer software music programs can be categorized into six areas: listening, transcribing, tuning, developing a steady tempo, accompanying and recording. When listening to music to be learned in the applied lesson, two applications that could assist special needs students are Spotify and YouTube. When transcribing music, Anytune and Tempo SlowMo are two programs that could assist students with transcription. Before beginning a lesson, it is necessary that students tune their instrument. InsTuner is an application that allows performers to chromatically tune any instrument. During a performance, it is essential that students keep a steady tempo. Pro Metronome is a software program that assists in developing this skill. When special needs students are learning their repertoire, Smart Music and Band in a Box are two popular software programs that will accompany them. When recording a performance, Audacity and Garageband are two software programs that will allow students to make a quality recording. Incorporating computer technology into the teaching of applied lessons allows students with special needs to progress at a faster rate and makes learning more exciting and enjoyable. With so many advances in technology occurring every day, applied music teachers should take full advantage of new software applications when teaching students with special needs so maximum learning can take place.

KEYWORDS: Music Education, Music Technology, Applied Music, Special Needs

Introduction

With recent and continuing advances in technology, it is essential that music educators become and remain knowledgeable of various software programs that could benefit special needs students in applied music lessons. In the area of musical performance, there are many software applications specifically designed to assist students in the learning and performing of repertoire for their instrument and also in the recording of performances. Computer software programs used in the teaching of applied music lessons usually can be categorized into six areas: listening, transcribing, tuning, developing a steady tempo, accompanying and recording.

Listening Software

When listening to music to be learned in the applied lesson, two resources that can assist special needs students are Spotify and YouTube. Spotify is a free commercial music streaming service launched in 2008 that allows users to listen to millions of songs from a variety of artists and musical styles. This free service is made possible by the use of advertisements, which are shown as the music is being played. In 2012, the number of Spotify users reached twenty million out of which around 5 million were paying a monthly subscription for upgraded services. This service is available for almost every desktop computer operating system and on all mobile devices allowing users to browse music by artist, album, genre, playlists, record label, as well as directed searches. On computers, a link also allows listeners to purchase desired songs through partner retailers (Spotify 2023). Even though Spotify is a very popular resource, it is not available worldwide. However, it is available to listeners in most of Europe, as well as Africa, the Americas, Asia and Oceania, with an availability in 184 markets. In March 2022, there were 188 million paying Spotify subscribers and 433 million total users (Porter 2022).

Another free resource that can assist these students in the learning of repertoire is YouTube. YouTube is a free online public communications site where registered users are allowed to upload videos for public viewing. The site also allows users to search through and view an enormous quantity of videos posted on the site. There are videos on every topic imaginable which makes this site an excellent resource for musicians to see and hear performances of repertoire they wish to perform. This site, like Spotify, is able to offer users free viewing due to the advertisements presented as videos are shown and more than a million advertisers use YouTube, the majority of which are small businesses. YouTube, which was founded in February 2005 by three previous employees of the PayPal online payment service, has become one of the most popular web portals in the world. More than one billion users visit the YouTube website each month watching over six billion hours of video. Almost every communication device can access YouTube with approximately 80% users living outside of the United States. In 2006, YouTube had become so popular that it was purchased by communications giant Google for 1.65 billion dollars (YouTube 2023).

By February 2017, one billion hours of YouTube were watched every day, with 400 hours of video uploaded every minute. Two years later, uploads had risen to more than 500 hours per minute (Hale 2019).

Transcription Software

Another category of computer software used in learning musical repertoire is transcription. Transcription is the process of notating existing music that has not been previously written down or rewriting an existing musical piece for an instrument other than the one it was originally written for. This task can be especially difficult for students with special needs. When transcribing music, it is helpful to slow down the musical examples so notes and rhythms can be heard more easily. Two programs that do this, which makes transcription much easier, are Anytune and Tempo SlowMo.

Anytune is a free application, produced by Anystone Technologies, designed to slow down the tempo of songs without any loss in sound quality or affecting the pitch. Musicians use this application to play, transcribe and practice songs imported from iTunes, video recordings and other audio sources. The user can mark and loop sections for practicing and also record, share and stream live audio directly to other compatible applications. Anytune is a universal program that will work with most devices and supports files found in the user's music library, except those that are Digital Rights Management (DRM) protected (Anytune 2023).

A second program for changing the tempo of songs is Tempo SlowMo, produced by Martian Storm Ltd. This application is an ideal practice tool for musicians because it allows the tempo of songs to be changed, either faster or slower, between a range of 20% slower to 250% faster than the original tempo, without affecting the pitch. A microphone can be used as the input device for this application but tracks can also be imported from a computer, an iPod music library or from other sources. Tracks can be looped to master difficult sections and users can record and save their own edited tracks (Tempo SlowMo 2023).

Tuning Software

Before beginning a lesson, it is essential that musicians tune their instruments. Students with special needs often find this task difficult. InsTuner Lite is a free chromatic tuner, marketed by Xiao Yixiang, which allows musicians to tune instruments quickly and accurately. It is highly accurate, well designed and easy to use. Features include a unique fixed note wheel for detecting pitch easily, a line-in mode as well as a built-in microphone mode. It can also be used as an electronic pitch pipe allowing students to tune by ear by matching the generated tones. The tuning range is from C0 to B8, which covers the range of almost all musical instruments

and since InsTuner Lite is a universal application, it will operate on all iOS devices including iPhone, iPhone5, iPod, iPad (InsTuner Lite 2023).

Tempo Software

When performing, it is also essential that performers keep a steady tempo. Pro Metronome is a free software program that assists musicians in developing this skill. This application, also marketed by Xiao Yixiang and designed for all iOS devices, (iPhone, iPod, iPad), is extremely precise and easy to use. Features include volume adjustment, seven metronome tones, dynamic accent settings of forte, mezzo forte and piano, a tap mode that calculates the beats per minute and a power-saving mode. Pro Metronome will also keep working if the device screen is locked, if the application is placed in the background, or opened with other applications (Pro Metronome 2023). By using this software, special needs students will have a much greater chance of performing with a steady tempo.

Accompanying Software

Another software category used in the process of learning music is accompanying. When students are learning their repertoire, it is very helpful if a software application can accompany them, performing the piano, band or orchestral parts as they practice. Two very popular accompaniment programs are Smart Music and Band in a Box.

SmartMusic is an accompaniment, software program designed to assist woodwind, brass, string musicians and singers at all levels, in developing music performance skills. When using SmartMusic, students perform into a microphone connected to a computer and then receive detailed feedback on their performance. The program has a vast repertoire library of over 30,000 song accompaniments in both classical and jazz styles and 50,000 exercises to assist students in the mastery of their instrument. As students play these songs and exercises, the program immediately assesses the student's performance on pitch and rhythm using green notes when the piece is performed correctly and red notes where the piece is performed incorrectly. A percentage score is then calculated and displayed for each exercise (Makemusic 2023).

To assist the student, SmartMusic will perform the solo line, the accompaniment, or both at once if the student desires. This allows the student to practice with the solo line at first and to hear how it fits with the accompaniment. When ready, the student can perform with the solo line and accompaniment and eventually with accompaniment alone. In addition, the program will perform songs at any speed so students can practice slowly at first and then gradually increase the speed until they reach the performance tempo. The program contains a loop feature, allowing students to practice short difficult passages of a piece over and over until they are performed perfectly. A metronome is included, so students can develop the ability to play evenly with a steady tempo. Note fingering charts are included with the program, allowing students to look up the fingering of a note if they are unsure (Makemusic 2023).

SmartMusic also allows students to develop their tonal memory and aural skills. When working on these skills, students first hear a passage of music and then play it back using no music, just their ears. For development of improvisation, the program includes many improvisation patterns and scale/chord exercises that will help students to learn to improvise and play in any key. The program allows students to record themselves as they perform for self-evaluation. The recorded files can be saved to the computer or burned to a CD (Makemusic 2023).

Students can download the SmartMusic software program in both Window and Macintosh formats from the Makemusic website for a yearly subscription fee of \$29.99 US. Music Instructors can download the educators' version with the ability to create and send assignments for a yearly subscription fee of \$39.99 US (Makemusic 2023).

Another excellent accompanying program is Band-in-a-Box, published by PG Music Inc. This program generates complete professional-quality backing arrangements of piano, bass, drums, guitar and strings or horns for songs in a wide variety of popular styles. To use this program, the user types in the chords to any song using standard chord symbols or chooses a tune from the music library of saved songs, and selects the musical style from the hundreds available. The user can also choose the key, tempo and select the exact instrumentation desired from the above listed instruments. The program will also generate samples of improvised solos for each song in a variety of musical styles. Band-in-a-Box has formats for both Macintosh and Windows operating systems and is sold in a variety of packages with prices ranging from \$129 to \$669 US (Band in a Box 2023).

Recording Software

After students have mastered the selected repertoire they have been practicing, they may wish to record and edit their performance. Software programs designed to do this are Audacity and Garageband.

Audacity is a free, easy-to-use, multilingual audio editor and recorder that operates on Windows, Mac OS X, and GNU/Linux systems. It was developed by a group of volunteers and distributed under the GNU General Public License. With Audacity, students can record live audio through a microphone, mixer, line input and USB/Firewire devices at sample rates up to 192,000 Hz with 16-bit, 24-bit and 32-bit samples. The program also allows students to cut, copy, splice or mix sounds together and change the speed or pitch of a recording. The envelope tool can be used to fade the volume up or down smoothly and the automatic crash recovery feature saves information in the event of abnormal program termination (Audacity 2023).

Audacity can also digitize recordings from cassette tapes, records, and with some sound cards, it can capture streaming audio. In addition, students can dub over existing tracks to create multi-track recordings and record multiple channels at once. Static, hiss, hum or other constant background noises can be removed and frequencies can be altered with equalization, bass boost, high/low pass and notch filter effects. Vocals can also be removed from suitable stereo tracks and voice-overs for podcasts or DJ sets can be added. Sound files can be imported, including MPEG audio, MP2 and MP3 files, edited and combined with other files or new recordings. Recordings can be exported in many different file formats including WAV, AIFF, AU, and FLAC. WAV or AIFF files can also be created that are suitable for burning to an audio CD (Audacity 2023).

Another program designed to assist students with the recording of performances is GarageBand. This application is a digital audio workstation, developed by Apple for use on the Mac OS X system, can record and play back multiple audio tracks in both 16-bit and 24-bit audio resolution. GarageBand also allows the user to add various effects such as reverb, echo, and distortion to audio tracks and includes a tuning system, which assists with pitch correction. In addition, GarageBand is a music sequencer, which contains a large selection of realistic, sampled instruments and software modeled synthesizers that can be used to create original compositions or play music live. GarageBand can also import and edit MIDI files allowing the user to manipulate such aspects as pitch, velocity and duration (GarageBand 2023).

Summary

With recent and continuing advances in technology, computer software programs can now be used to assist the teaching of students with special needs in applied music lessons. When computer technology is incorporated into the learning and performance of musical repertoire through the following six areas: listening, transcribing, tuning, developing a steady tempo, accompanying and recording, special needs students progress at a faster rate and learning is

made more exciting and enjoyable. With so many advances in technology occurring every day, music teachers should take full advantage of new software applications by incorporating them into the applied music lesson so maximum learning can take place.

References

- Anytune. 2023. www.itunes.apple.com/us/app/anytune-slow-down-music-bpm.
- Audacity. 2023. Available online at: <https://sourceforge.net/projects/audacity/>.
- GarageBand. 2023. Available online at: www.apple.com.
- Hale, James. 2019. "More Than 500 Hours Of Content Are Now Being Uploaded To YouTube Every Minute." Available online at: www.tubefilter.com/2019/05/07/number-hours-video-uploaded-to-youtube-per-minute/.
- InsTuner Lite. 2023. Available online at: www.eumlab.com.
- Makemusic. 2023. Available online at: www.makemusic.com.
- Pgmusic.com. 2023. "Band in a Box." Available online at: www.pgmusic.com.
- Porter, Jon. 2022. "Spotify's subscribers rise to 188M amid podcasting setbacks." *The Verge*. Available online at: <https://www.theverge.com/2022/7/27/23280283/spotify-q2-2022-earnings-podcasting-audiobooks>.
- Pro Metronome. 2023. Available online at: www.itunes.apple.com/us/app/pro-metronome.
- Spotify. 2023. Available online at: www.spotify.com.
- Tempo SlowMo. 2023. Available online at: www.itunes.apple.com/us/app/tempo-slowmo-bpm-slow-downer.
- YouTube. 2023. www.YouTube.com.