

**Integrating Technology in the Choir Classroom:
Non-egregious Integration for Promoting Musicianship and Learning**
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Problem Description:

- While many students previously struggled to have technology access, the rise in Google for Education has provided millions of students worldwide with inexpensive technology
 - As of January 2020, 40 million Chromebooks were being used in education worldwide
 - Additionally, many schools and internet service providers now offer free or greatly-reduced internet plans for families with K-12 students
- With the rise of new technologies in software development, it has become easier for app developers to create cross-platform applications which work on any device, solely within the web browser with no additional software
 - Many popular apps already use this: Discord, WhatsApp, Twitch, Visual Studio Code, Microsoft Teams, etc. – all use a web-browser backend even for desktop and mobile applications, allowing the same features as using the web application
- This research seeks to present well-documented, secure, cross-platform software for various musical contexts

Background:

- Given that many music teachers are teaching larger, various classes – especially with the new change in teaching licensure – teachers are being held to higher expectations with even more responsibilities and standards
- Technology and training apps can reduce the amount of work necessary for a teacher to actively train and grade students across a variety of musicianship skills
- The Coronavirus pandemic has demonstrated the necessity of integrating technology into the classroom; the teacher must make the decision to embrace it or fear it and let the students' learning suffer
- Video/audio conferencing technologies are most often insufferable for ensemble members, as variability in internet connection makes it difficult for teachers and students to interact equally – especially in rehearsal
 - While “virtual choirs” are effective for creating a cohesive sound, students are missing out on the communal aspect of choir rehearsals, and it may be difficult for students to find a place to rehearse and/or record their parts
- An advantage of using technology, when teaching sight-reading, is that computer programs provide automatic feedback to singers reducing the time teachers spend administering and scoring the exercises

Additional Strategies for Integration:

- Techniques for the effective “Zoom choir”:
 - Sing with the children (you will not be able to hear them, but they can hear you and sing along with another voice), show visuals, conduct as the children sing;
 - Play recordings, look at a musical score together, share musical ideas, play listening games, do vocal warm-ups or movement activities, sing/play/chant one at a time, sing, play, and in call-and-response
 - Try rhythm “flash cards”: <https://www.ashleydanyew.com/library/free-rhythm-pattern-cards>
- Record lectures – audio and video! Digital voice recorders are easy to find in high quality for cheap on Amazon and any modern camera should be able to record HD (720P-1080p min.) video.
 - Students absolutely benefit from this, and so do you! Reports found that students having access to lecture recordings and materials improved grades AND attendance – students most often prefer courses that offer recorded lectures
 - “There seems to be little evidence that having access to recorded lectures is the main cause of incentive to miss lectures. [...] the majority of students strongly agreed that they preferred receiving lecture content in class, even when it is available through other means”
- Try the “SAMR” method for integration
 - Substitution: Swap out a very basic technology for something else – using digital music (i.e., on tablets) rather than paper sheet music
 - Augmentation: Improve on activities currently being substituted – highlighting, coloring, and marking music without damaging it (digital scores)
 - Modification: Applying something completely new – attach an audio (practice) file to digital sheet music, such as an accompaniment track
 - Redefinition: Complete transformation of technology integration – sheet music reader which has a record function, annotation functionality, assessment submission

Issues with Integration

- Most music classrooms do not have desks
- Chromebooks are given to districts for *free, but tablets like iPads are costly – especially per student
 - Major conflict: BYOD, or class equipment?
- OS platforms are NOT an equal playing field – many iOS apps do not exist on android; many Windows apps lack Linux and OSX support and vice versa
- Tablets (iPads) should not be used in the entire ensemble for the concert; cut out the digital scores roughly two weeks before a concert
- Be mindful of technology resources; be wary of ensuring student data privacy and security above all
- Understand how to use technology from the teacher AND STUDENT perspectives
 - Know who to contact for issue resolution, or better yet, know where to look for answers – troubleshooting by yourself whenever possible will help instill the solutions in your memory

Tools for...

<p><u>Classroom Management:</u></p> <ul style="list-style-type: none"> • Musicfirst: https://www.musicfirst.com/ • Canvas: https://www.instructure.com/canvas/try-canvas • TeacherKit: https://www.teacherkit.net/ • Honorable Mentions: Musicologie, Google Classroom, Attendance2, Tick Tick, ClassDojo, Alora, FlipGrid, Seesaw, Pear Deck, Teachermade 	<p><u>...Teaching Music Theory:</u></p> <ul style="list-style-type: none"> • Tenuto and Theory Lessons (aka MusicTheory.net) https://www.musictheory.net/ • ABRSM Music Theory Trainer: https://na.abrsm.org/en/exam-support/apps-and-practice-tools/music-theory-trainer/ • Chord!: http://getchord.com/ • Chordbot: https://chordbot.com/ • Honorable Mentions: Waay, Mapping Tonal Harmony Pro, Music Theory pro, Music Theory Illustrated, Earmaster
<p><u>...Classroom Communication:</u></p> <ul style="list-style-type: none"> • BAND: https://band.us/en • Remind: https://www.remind.com/ • Honorable Mentions: GroupMe, WhatsApp, Signal, Discord, Slack, Facebook Groups 	<p><u>...Teaching Musicology/History:</u></p> <ul style="list-style-type: none"> • Oxford Dictionary of Music: https://www.mobisystems.com/oxford-dictionary-of-music/ • OnThisDayInMusic: https://www.onthisday.com/music/ • Informusic: http://www.informusic.org/ • Honorable mentions: Britannica, Naxos, Wikipedia, HipHopHistory, Musicmap
<p><u>...Rehearsal:</u></p> <ul style="list-style-type: none"> • My Choral Coach: https://matchmysound.com/my-choral-coach/ • Harmony Helper: https://harmonyhelper.com/directors/ • Tonara: https://www.tonara.com/ • Honorable Mentions: SmartMusic, Zoom, VoiceLessonsApp, Practice It (Journal) 	<p><u>...Teaching Music Composition:</u></p> <ul style="list-style-type: none"> • MuseScore: https://musescore.org/en • NotateMe: https://www.neuratron.com/notateme.html • PreSonus Notion: https://www.presonus.com/products/Notion • BandLab: https://www.bandlab.com/ • Soundtrap: https://www.soundtrap.com/ • Honorable mentions: Finale, Sibelius, Pro Tools, Logic Pro, Garageband, Adobe Audition, Fruity Loops
<p><u>...Teaching Ear Training and Score Reading:</u></p> <ul style="list-style-type: none"> • Sight Reading Factory: https://www.sightreadingfactory.com/ • Sight Reading Project: http://thesightreadingproject.com/ • Perfect Ear: https://www.perfectear.app/ • Music Tutor: https://musictutorapp.com/ • Toned Ear: https://tonedear.com/ • MacGamut: https://www.macgamut.com/ • Honorable Mentions: Politonus Ear Training, See Music, Tessitura pro, GNU Solfege, Note Teacher, Solfa, HearEQ, Beat Mirror 	<p><u>Bonus: ...Teachers learning technology:</u></p> <ul style="list-style-type: none"> • Many! Including Coursera: https://www.coursera.org/ • https://www.choraldirectormag.com/archives/october-2014/chris-russell-inside-a-high-tech-choir-room/ • https://www.independence.edu/blog/apps-that-help-you-learn • https://www.edutopia.org/article/how-help-teachers-learn-new-technology • https://choralnet.org/2020/09/cyber-solutions-for-quarantined-choirs-a-guide-to-virtual-rehearsals-performances/ • https://hellomusictheory.com/learn/best-music-theory-apps/