The Decline of Music Education: A Predictive Analysis

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On my honor as a University Student, I have neither given nor received unauthorized aid on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments

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Abstract

Public schools in the United States are increasingly emphasizing STEM education and in doing so, reducing the quality of music education due to decreased funding and resources. Virtual learning forced by the COVID-19 pandemic has further reduced the quality of music education, and the available technologies for music education are limited. Music exposure and music education are proven to give students positive social and mental development, which gives benefits across all areas of education and work. This paper analyzes various technologies available to increase the quality of virtual music education. If virtual learning is not improved, and in-person music education is not emphasized upon returning to the classroom, the social development of students will noticeably decrease and will have a lasting social impact for the foreseeable future, due to the extensive time without the standard mental development provided by quality music education. Virtual learning can be improved with available technologies tailored for different types of education, which requires extra research and dedication from all music educators.

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Introduction

Students in the United States will soon fall behind in their social development, because of the unwillingness or inability for schools to transfer music education online, while simultaneously placing a greater focus on exclusively STEM education. The positive developmental impact of music education has been analyzed and found to increase social cooperation and capability (Ritblatt et al., 2013). In the world's current pandemic state, online school has made teaching and learning much more difficult, especially for music education (Daubney et al., 2020). Limited technologies currently exist to assist in the teaching of music education, and they all have drawbacks when compared to traditional, in-school teaching. As students spend less time in quality music education, their social readiness for everyday life will be severely impacted. How can schools improve online learning to give students quality music education? This paper evaluates the various benefits of quality music education, followed by the current state of the music education system, as it is impacted by the increase in STEM education and the global pandemic. Various technologies are then compared based on the practical application in virtual classrooms. Finally, potential improvements to the current system are discussed and evaluated.

Studies have confirmed that exposure to music can produce many positive impacts on children. Specifically, social development skills have shown an increase when exposed to music, especially when listening is in an enjoyable experience (Hallam, 2010). When actively interacting with music for an extended period of time, brain development improves and students show an increase in brain activity that can be useful in other subjects and topics. When teaching students music education, this type of development becomes frequent and allows the brains of

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children to continue to improve and change. When teaching young children music skills, (Ritblatt et al., 2013) found that children who went through a school-readiness music program were found to be more socially cooperative and capable than their peers who did not attend. This study is consistent with the research of (Hallam, 2010) that by teaching music and exposing children to it, there are direct, observable effects that positively impact their social abilities. These abilities can include teamwork, cooperation, listening, and following instructions. Research completed by (Collins, 2013) reveals that neuroscientists have found significant benefits from music education such as memory and brain plasticity. This research gives insight to the definable, objective benefits that music education provides to students. The increased neurological development of students is critical for their mental and emotional growth, and gives them more ability to develop as musicians, students, and individuals.

Current Situation

As the world marches forward with increasing focus on STEM education, music education is becoming increasingly ignored. According to (Collins, 2007), between 1999 and 2004, students involved in music education courses fell by 50 percent. The global decline in music education can be attributed to an increase in standardized evaluation and education reforms focusing less on fine arts and more on technical education (Aróstegui, 2016). Many governments and programs have put a higher focus on standardized testing over the past 20 years, in order to be sure students from across different areas and environments were accessing similar education. While this type of approach can be effective for evaluating math or English, more subjective topics such as music and art are unable to be tested in a standardized way, making them much less critical as schools attempt to increase their test scores. In many states,

such as Virginia and Maryland, there are standards for all arts and music education provided by to teachers, but there is no system of evaluation that can be standardized (VDOE :: Fine Arts Standards of Learning Resources, n.d.). There is no simple answer to the problem of decreasing music education, but there are many potential impacts of a decline in music education.

In March of 2020, most schools across the country were forced to switch to virtual learning. The priority was to keep students from spreading COVID-19 amongst themselves and between them and educators. This was effective, but had many negative impacts for every students' learning. Many students were expected to switch to online learning with limited or no internet access, many had to be home alone during the day while their parents worked, and everyone had to lose nearly all social interaction with their peers. Switching to virtual teaching created monumental challenges for all educators, but the impact for music was especially devastating. Students in ensembles could no longer perform with a group, due to the technical limitations of online learning. Group musical activities in general became much less coordinated, and the quality of music education dropped significantly (Daubney & Fautley, 2020). During the pandemic, the primary methods of teaching virtual music education are individual lessons and activities. These methods are unfortunately not as effective when teaching music, due to the nature of ensembles. Unless a technological solution is found, music education will decrease in quality until schools are able to fully reopen (Nichols, 2020). This decrease will have a lasting impact on students for years, since many will likely permanently quit ensemble groups because of this past year's difficulty. Additionally, lower quality education will not provide the same neurological benefits of traditional online learning. The long-term social impacts of this will likely cause a sharp decrease in musical, social, and developmental skills.

Technologies

In the current climate, various technologies are used for virtually teaching music education. Classrooms can use Zoom or Google Meet to have music class without having to introduce new applications to their students. The problems with using these technologies come from the impossibility of synchronously playing instruments or singing, and the difficulty of receiving feedback. With these applications, students must either perform individually or muted, which defeats the entire purpose of group ensemble. For members of a group ensemble, the only realistic and productive option is to give short, individual lessons to students. The problem with this is that it takes away the aspects of teamwork, collaboration, and confidence that can be given from a group or full ensemble. Classes such as music theory, introductory music education, and music appreciation are less difficult to coordinate over Zoom or Google Meet, due to the lack of performance compared to ensemble meetings. However, these classes still face challenges since they are unable to coordinate listening to music and performing informal examples. Students therefore are less benefitted by this setting than they would be in a traditional classroom.

Other technologies have become prominent for teaching virtual music, such as Acapella. Applications such as Acapella allow multiple students to individually record themselves singing or playing into their cell phone, from which they can send the recording to their teacher. The app allows the teacher to combine all of these recordings and create a single video that displays the whole ensemble. While this allows groups to perform remotely, it has multiple limitations, especially for beginning musicians. It requires that all musicians are able to keep nearly perfect time, in order for each recording to accurately line up. For beginning musicians, one of the benefits of learning in person is having the ability of a live instructor able to direct time for the whole ensemble. Without someone keeping time for the whole group, this is a large challenge

when trying to make a recording. Higher-level groups such as high-school and college ensembles are less likely to struggle with this technology, but they still will not experience close to the same level of performance as they would with a live group. Other challenges with this kind of application involve not being able to hear other performers while playing. In any ensemble, blending tone and pitch are important parts of making a single, quality sound. In a live performance or rehearsal, instrumentalists and singers are expected to listen to their peers and determine if they fit in musically. If not, they are expected to adjust themselves to match the tone of the group so no one sticks out. By doing so, the group can have a much more unified sound and a greatly increased performance. This technology only allows for individuals to attempt making adjustments off of their own voice, which will often be off from the rest of the group. A potential solution to this problem is for each performance, multiple recordings are made and shared with the group so each performer can hear themselves compared to the rest of the group and adjust for the next submission.

Another solution that has become popular for students is Music Prodigy (Music Prodigy, n.d.). Music Prodigy is a free application that allows teachers to create and share music scores with students. Students enrolled in the class can view the shared scores and play the music on their own instrument (or sing). The application listens to the student and provides real-time feedback on the accuracy of their playing by highlighting notes in green or red. It then records the score (based on accuracy) and makes the score visible to the teacher of the course. The teacher can take the score and the related recording and use the software to determine any extra assistance the student needs, and they can view the scores of the entire class at the same time. This software has some benefits for classrooms and provides more useful feedback then other applications. With the automated accuracy measurements, students can see where they need

more work without having to wait for a teacher's response. Additionally, it provides teachers with some ease since they can choose to just listen to the recordings of students who seem to need more help. This gives teachers more flexibility with their time and allows them to dictate how to devote classroom time.

The drawbacks to this application include the fact that there is no way for multiple students to play together or create a simultaneous recording. A benefit of using this application is that it can be used by almost any device with a microphone, such as a smartphone or a computer. This is good because it allows more students to be able to use this app and participate in music education. While the point of the application is to improve individual performance, solely using this application for a class would only give students experience playing alone, which reduces a large part of the benefit of music education. While this app is useful for music ensembles, such as bands and choirs, it is not meant for teaching general music theory and skills, especially for elementary school-type classes. Another drawback of this application is that while it automatically can analyze students' abilities to play a song accurately, it does not have the ability to give students feedback on their tone quality and intonation. These are things that require human observation to give accurate advice on ways to improve. If a student plays with improper technique that leads to poor intonation, that may not be picked up by Music Prodigy and teachers that only focus on students struggling with accuracy might overlook them. Teachers that choose to use this application should make an effort to listen to the recordings of all students, and not just those who struggle in accuracy from the app's perception.

Counter Arguments

There is not a universal agreement that the pandemic will have severe negative impacts on the future of music education. (Thornton, 2020) describes that because of the increased levels of creativity, community, and responsiveness from educators, education in music will be forever strengthened after the pandemic is over. This claim is based on the concept that because of the increased levels of dedication and creativity from educators, the education system has grown and learned how to better serve students. This claim relies on the assumption that the lessons learned during the pandemic will be useful in the future for educators, and it also assumes that the education system will benefit from increased teacher abilities, with no regard for the impact on students. I do agree with the claim that teachers and educators have had to be creative and devise unique and ingenious solutions to continue teaching through the pandemic. However, the mental and social toll on students will outweigh these benefits. Most students will likely go for at least a full school year, if not longer, without in-person music education. The absence of high-quality music education in this break will cause many students to drop out of ensembles, and many more students will fall behind where they should be in their music education. Educators will have to do more over the next few years to make up for this lost time just to get students to where they are expected to be based on previous standards.

An argument could be made against bolstering quality music education globally at the potential expense of STEM. The idea of pushing towards a STEM-only education can be validated with the utilitarian argument that future workforces need to be as prepared as possible to continue humanity's progress in science and engineering. While this has some merit, there are three main arguments against this. First, not all careers require any STEM education/training. There are many valid careers that need more focus on the humanities and still contribute greatly

to society. If we focused all of our efforts on STEM, many jobs focused around culture, administration, humane services, and finance, along with many more, would have inadequately prepared workers. Second, not everyone is qualified for or interested in a career in STEM. This argument directly disagrees with the utilitarian part of the argument for more STEM. Arguing to allow people to have more choices in careers may be less productive to a better overall society, but is a more moral decision, since it gives more people the freedom to pursue what they want. Third, the argument for more STEM could claim that a more productive workforce is more important than a society with more socially adept people. This is a very subjective argument, and simply comes down to a matter of opinion about which is more important. It is my opinion that the best possible society has a large STEM-trained population, but all members have some arts (specifically music) education to increase their social development and cultural appreciation. Since this is a matter of opinion over which is more important, I believe that my argument remains valid to this potential criticism.

Solutions and Conclusions

The challenge of teaching music virtually does not have a simple solution. All technologies and strategies available have different benefits and downsides, and none of them come close to providing the social development of in-person education. However, even as schools begin to reopen as the pandemic's end is in reach, it is important to determine the best course of action for virtual music education, since it is very possible that for any number of reasons, schools may go back to being virtual again. The different types of music education classes all face different solutions moving forward. For younger elementary school students learning about musical concepts, instruments, and themes, Zoom/Google Meet provide enough

synchronicity that students can learn about musical topics without much need for ensemble-style performance. Lesson plans will need to reflect the lack of interaction between students, and encourage students to sing/perform with recordings to get some sense of group performance. Classes focused on music appreciation and music theory face similar solutions to elementary students. Educators can assign recordings for students to listen to/study on their own, and they can discuss and describe them similarly to how they would in person. For choir groups, a potential system could involve the instructor preparing a recording (either by them, a student, or from the internet). The recording could then be distributed among students to help them get a sense of how the piece should sound, and then after individual practice using applications like Music Prodigy, they could use an application such as Acapella to make an initial recording. The instructor could compile them into a single recording, and then redistribute to students for them to review. Then students could send in another recording to make the final performance. The system isn't perfect, as it requires students to work alone with multiple technologies, but allows them to have some experience working with a musical group in the hopes that they can pick up near where they left off once they return to in-person ensemble. A similar approach could be made for band students, and instructors could also offer individual lessons over Zoom/Google Meet to assist with any specific issues. It's important to note that this and similar virtual educational systems can help students maintain their skills and still participate in an ensemble, but it is no replacement for the experience of in-person music education. The best solution for the time being is to use the most relevant technology for the specific type of class being taught, while having the flexibility to use other technologies to account for the shortcomings of the primary one. The idea of this type of education is more for maintaining students' abilities in the hopes that they are able to continue in their ensembles after returning to school. Otherwise, many

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students will not practice while at home and will come back to school without much of the skill they had already developed, and will likely fall behind in their groups or drop out entirely. By maintaining a system that keeps students active in their ensembles and helps emulate the in-person experience, educators can continue the social skill development of their students. If they are able to do so, the transition back to in-person teaching will be less difficult and less developmental progress will be lost.

The decrease in musical education caused by the pandemic will leave lasting impacts on students. At this point, the best solution for educators is to utilize the available technologies that specifically complement their curriculums, and try to compensate for the drawbacks that those technologies may possess. If students are no longer being exposed to quality music education at a regular interval, the social and mental benefits that come from music education will stop. Multiple technologies currently exist to aid teachers in remote music education, but none of them are as beneficial to students as in-person instruction. As students continue after the pandemic, it is reasonable to expect that they will have lesser social skills than students of years before them, and it is possible that they will never catch back up. Educators must find ways to utilize technology to maintain students' abilities in order to keep their progress from stopping, which will allow them to continue to improve mentally, musically, and socially after the return to in-person teaching.

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