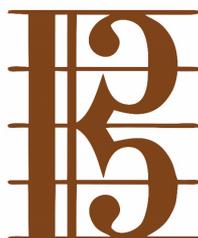## Excerpt: pre-print
companion articles

Exploring Possibilities in a New Virtual Landscape

Gabriel Lee

The Brave New Normal of Online Teaching
From Makeshift to Makeover

Andrew Filmer

Exploring Possibilities in a New Virtual Landscape

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The COVID-19 pandemic has effectuated a shift in the way we perform and teach music. All around the world, virtual music performances and online music lessons have become more normal than in-person concerts and face-to-face lessons. It is truly a strange time to be alive, and an even stranger time to be a musician.

The transformation of the musical landscape from a physical to a virtual one has progressed at breakneck speed. Throughout this time, musicians have found innovative ways to present their music and teach their students online, keeping music performance and education very much alive. This article aims to share some updates and explore possibilities within this new virtual landscape that may be useful for anyone teaching or learning music online.

Technology

Video-conferencing software have seen drastic improvements over the last few months, with Zoom releasing a major update for musicians in the form of a "high audio fidelity" and "stereo sound" option.[1] Jamkazam, Jamulus and Jacktrip have also greatly improved on minimising latency of its platforms, and it has become possible for musicians to play together almost simultaneously. However, to take advantage of these advancements, both parties require the use of high-quality microphones, headphones and audio interfaces connected to a laptop or desktop, and have ethernet wired connections. This is not always possible. More often than not, students can only connect with their smartphones or tablets on a WiFi connection. What can educators do to provide the best learning experiences for students with these technological limitations?

1. Finding the right software for your online lessons

I recently organized a test session for my "Teaching Music Online" class at the Yong Siew Toh Conservatory of Music, in which 14 students were paired up to test various instruments across several video-conferencing software. They tested low and high frequencies, as well as short and sustained tones. There were some unexpected results – for example, a pair of trombonists found that a Facebook video call on iPad provided a better audio quality for trombone sounds than a Zoom video call. A pair of vocalists also found the audio quality on Facetime to be preferred over Zoom for singing, when connecting via an iPhone.

With these findings, these participants were able to rank their preferred software according to the combination of devices used and their respective

instruments, and will be able to advise their students on the optimal setup, given a student's available hardware. Finding the option for optimal audio quality is always a good start to an effective online lesson.

2. Upgrading equipment

If teaching online is going to be the long-term plan for students who do not have proper equipment, it would be worthwhile persuading them to purchase simple upgrades like ethernet cables, which will make a significant difference to the stability and speed of the connection. For the serious learners, investing in a USB or XLR microphone would provide higher-quality audio, and the added possibility of playing together online via Jamkazam, Jacktrip or Jamulus.

While these technological aspects of online music lessons are impactful, it is equally important to develop pedagogical strategies to maximize the effectiveness of teaching in this new virtual environment.

Pedagogy

It is crucial to realize that teaching online requires a different approach to in-person lessons. Although there are certain limitations to online teaching, there are also several advantages that come with it. Music teachers who make full use of the advantages of this new learning environment will likely produce positive results and help their students grow in new ways.

1. Focusing on the visual

When teaching students who do not have optimal audio equipment setups, the teacher's observations will have to rely more on sight than on sound. This is a good opportunity to focus on aspects of the students' playing that do not have such an emphasis on sound: working on a straight bow, hand shapes, a fluid right hand, finger articulation and more. In a synchronous online lesson, students are able to adjust these things while monitoring themselves on their computer screens, and this helps them learn how to practice independently. This can be done by switching to "Gallery View" in Zoom, and allows the student to monitor themselves while having their teacher side-by-side on the same screen.

The equivalent in an in-person lesson would be having the student self-monitor using a mirror, and having the teacher observe through the mirror. In a sense, this is more reliable than would be in an in-person lesson, as both teacher and student would be looking at the mirror from different angles, and will not be seeing exactly the same things.

On the teacher's side, relaying instructions via visual cues like "stop", "higher", "lower", instead of talking

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1. Jen Hill, *High-Fidelity, Professional-Grade Audio on Zoom*, https://blog.zoom.us/high-fidelity-music-mode-professional-audio-on-zoom/ (accessed 25 September 2020)

while they are playing, can also be more efficient. This reduces the need for the teacher to raise his or her voice in an attempt to talk over the student's playing, which can be quite energy-draining.

It is useful to remind younger students that their window screen is an area for them to express themselves, but they have to stay within the limits of the screen. This has the unusual effect of having students more disciplined than they might be in in-person lessons, as they know that running around would derail the lesson entirely. I have noted that they have also been more attentive during these online sessions, perhaps feeling the need to focus more in such an environment.

2. The use of video recordings

The use of video recordings are a great way to teach students both asynchronously and synchronously, especially those who do not have optimal audio equipment setups. This is because the audio quality of smartphone recordings are often of a higher quality than the sound that is transmitted and compressed through a video conferencing app on a phone. The practice of getting students to record multiple videos of them practicing, and choosing the best take to view together with their teacher via screen share, allows them to develop the skill of self-critiquing. Being able to watch themselves in a video recording often results in the student noticing things that they may not be aware of in their own playing. Every student should aim to learn more independently; towards this goal, it would be useful for the teacher to guide the student by asking how he would teach himself, while watching the video recording together. This also allows further discussion between teacher and student, with the teacher advising the student on additional things he or she should look out for. Recording and archiving these practice videos also allows them the opportunity to monitor their progress.

May

Right: An archive of a student's practice videos

1:20 2:52 1:11 2:50 3:15

July

1:30 1:33 2:08 2:22 1:43

It is additionally beneficial to record synchronous online lessons, so that students can review them and take notes before practicing. For students who do not have the capacity to watch an hour-long recording, it would be better to record shorter lesson recap videos at the end of the lesson. This has been a really effective way to help my students remember the finer details better, and I have transferred this practice to my in-person lessons as well.

3. Online group sessions

Music groups and orchestras have been finding ways to rehearse together online since the beginning of the pandemic. However, few groups have managed to play together synchronously due to a lack of equipment and experience in the usage of low-latency software and most rehearsals have had one musician play at any one time. This new format of group rehearsals does have its limitations, but also opportunities to develop certain skills.

Although it is more challenging to build camaraderie over a video conference call, there are ways to encourage interaction and cultivate students' leadership skills during these sessions. When conducting violin sectionals, I would get students to take turns leading warm-up exercises to encourage participation from everyone. This exercise of getting them to verbalize these exercises and practice teaching others helps them develop a deeper understanding of the exercises. It is also a way to ensure that each one of them has an accurate understanding of these concepts when executing the exercises. This also applies to the playing of musical excerpts. Getting each student to take turns leading musical passages and teaching one another ensures their involvement during the session. Appointing a different note-taker for each session helps with generating key takeaways, and helps with continuity between the sessions.

4. Building community online

The advantage of an online learning environment is that group lessons and studio classes can now be organized without major logistical headaches. There is no longer a need for a physical venue, and it is much easier finding a common time for everyone now that many activities have been cancelled. With the new possibility of having anyone around the world joining in these online sessions, I have had the privilege of having a number of distinguished musicians guest teach my studio classes. Alan Choo (co-concertmaster of the Apollo's Fire, a Grammy-winning baroque orchestra) provided a unique perspective on historical performance, and the art of performing concertos. Andrew Filmer (the author of the companion piece to this article) introduced useful warm-up exercises and encouraged my students to explore different interpretations. Andrew Kwon (violinist of the Santa Barbera Symphony) provided tips on playing virtuosic violin repertoire. Christina Zhou (principal of Coronation Music School) shared useful practice techniques and fun musical games. These online studio classes, which are also livestreamed on my Facebook artist page, have been an invaluable opportunity for my students to practice performing, while receiving valuable feedback.

Right: Gabriel's violin studio class with Andrew Filmer as guest teacher

Another example of building community and collaborations online is through the Music Society of Myanmar's yearly Festival and Competition, which was held entirely online this year. Without the need to fly in our festival artists to Myanmar, we were able to involve 35 artistes teaching online workshops, seminars, masterclasses; adjudicating competitions as well as performing concerts. Our community outreach program also contributed educationally to 103 children from 8 children homes in Myanmar. This was carried out via three asynchronous instructional videos put together by our community outreach team, and response videos from the children. This switch to an online format not only allowed us to continue inspiring music students from Myanmar, but also allowed us to do it on a larger scale.

Left: Musicians performing Sulwyn Lok's "Conversations" at the Music Society of Myanmar's Virtual Concert

Although the pandemic has resulted in many cancelled live performances and events, it is up to musicians to innovate and adapt to a new normal. Social distancing does not apply to the virtual environment, and this is a time for more collaboration beyond borders. Filmer and I collaborated before the pandemic, with each one of us having to travel to Malaysia or Singapore, or both of us to Myanmar. This shift to a virtual music world has enabled us to collaborate even more than before.

Online Teaching Success

As can be seen from the examples listed in this and Filmer's article, online music lessons can be very effective, given the right strategies. A violin student from Myanmar, whom I have been teaching online over the past three years, has recently been awarded a full scholarship to study at the Yong Siew Toh Conservatory of Music in Singapore. During these three years, I taught him online using a combination of asynchronous and synchronous teaching, applying the concepts we discussed above. We would also have in-person lessons whenever I visited Myanmar, or when he came to Singapore, but these were not regular occurrences. The virtual learning environment gave us the possibility of continuous and consistent progress, even though we live in different countries. It also gave me the opportunity to develop strategies for teaching online, preparing me well for the switch to online teaching during the COVID-19 pandemic. The best way to learn anything is by doing, and I would encourage readers to make use of such opportunities to experiment and explore this new virtual environment.

With this case study, the notion that online music lessons are not effective for advanced students can be comfortably dismissed. The value of online music lessons will transcend the current pandemic, and continue to be relevant in the future of music education.

Looking to the future

The future looks uncertain with a vaccine for COVID-19 still yet to be found, but the possibilities in advancing online music learning and collaboration are limitless. With the introduction of 5G technology and further advancements in music technology,[2] playing music together in real-time over the internet looks likely to be the next new normal. The research and development of virtual reality in music will also provide exciting new possibilities in the near future.

Technology provides a world of possibilities, but also shrinks the world into a global village through the transformation of space and time. This comes with greater competition as there are exponentially more options for customers. It is therefore critical for musicians and music educators to embrace these advancements in technology, in order to stay relevant in a rapidly-changing virtual music landscape.

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2. Andy Jones, "5 reasons why 5G will be amazing for music lovers and producers", https://www.musicradar.com/news/5-reasons-why-5g-will-be-amazing-for-music-lovers-and-producers (accessed 25 September 2020)