

Digital Strategy for Teaching and Learning

A report by the ad-hoc working group for Covid-19
in the Setnor School of Music

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INTRODUCTION

The effects of Covid-19 present challenges to organizations and institutions across society, including the Setnor School of Music. Although the effects are not entirely known at this time and are in flux as the pandemic continues, we know the ways in which we deliver on our core mission of providing a high-quality music education will be impacted. Yet, these challenges also create opportunities for Setnor to advance its commitment both to training 21st century musicians and to further differentiating itself among peer institutions.

We propose a bold strategy for teaching and learning that is resilient to the effects of Covid-19, while also instructing our students in digital skills that are necessary for contemporary musicianship. This plan incorporates a range of technologies into our curricula, including state-of-the-art hardware and software, allowing students and faculty to have full access to digital musical activities, while fostering a rigorous, flexible, and accessible learning environment.

Although Chancellor Syverud has announced that we will be holding fall semester on campus, changing circumstances could alter this plan. Even if we are able to have an unimpeded fall semester, it will require substantial online components to protect at-risk communities. Music presents unique issues in a residential scenario: one-on-one lessons in confined spaces, the increased danger of singing and performing with wind instruments, and the difficulty of sanitizing expensive and delicate equipment between uses. Because of these unique issues, it is critical that we prepare for a semester that relies on technology and virtual accommodations. If we aren't adequately prepared to adapt smoothly and effectively to a changing situation, including creating a vibrant and compelling online curriculum, we will be at an increased risk of losing our students.

In order to be ahead of this situation, we also emphasize that we must act with urgency. While some decisions can be had in the coming months, certain equipment needs to be purchased as soon as possible to avoid competition with other institutions and supply chain issues.

KEY FINDINGS

- High-quality, low-latency distance learning opportunities for lessons, juries, and chamber ensemble rehearsals can be achieved through a combination of hardware and software.
- Strategic use of technology allows for flexibility in program delivery, able to respond to various Covid and post-Covid scenarios, where not all groups may be comfortable or physically able to meet in person.
- Providing our graduating students with robust and meaningful experiences using industry-standard technology will better prepare them for the 21st century musician's job market.
- This technology can also be used to connect with our partners in other locations, including programs in New York City, Los Angeles, Strasbourg (France), and Paraíba (Brazil), creating new opportunities with partners, and making extant activities easier.
- High-quality recordings of student and faculty musical activities can be assembled and presented publicly (e.g. virtual recitals, convocations, webinars) as promotional and recruitment videos.

DEFINITION OF TERMS

DAW: Digital Audio Workstation; software that is used to record, edit, and master audio.

Pro Tools: Industry-standard digital audio workstation.

Source Elements: Makers of high-quality, low-latency audio streaming software.

Source-Connect: Peer-to-peer audio streaming software with high quality and low latency, enabling synchronous remote musical activities.

Tascam: Brand of portable audio recording devices that are used to capture high-fidelity sound.

STRATEGY

The Setnor School of Music should adopt technology that allows for all activities to take place online. Some of these activities can take place using extant teleconferencing tools, such as Zoom and Blackboard Collaborate Ultra. However, due to the nature of music making, some activities will need additional resources beyond these platforms. For example, lessons, ensembles, and certain SRT courses where high-quality and low-latency audio is required will need additional tools.

To mitigate impacts, we propose a three-part strategy for online learning. The first part is to invest in equipment so that every student and faculty can capture high-quality audio remotely (Activity 1). Relatedly, we propose we adopt a common digital audio workstation (DAW) for every student and faculty so they can edit and mix their own captured audio (Activity 2). Finally, we should adopt an audio streaming service for high-quality and low-latency audio in courses that require greater fidelity for synchronous interaction (Activity 3). This hardware and software will find immediate use during the fall semester as we adjust to a hybrid model (online/residential). However, this strategy implements technology across our programs in a way that has a lasting impact

This working group should continue to convene over the summer—perhaps constituted as a committee, when possible—to consider other related activities, including creating training materials for students and faculty, adopting other common digital platforms (e.g. Noteflight notation software), and developing new strategies for community engagement using digital means.

Practical Use Scenarios

	Lessons / Juries / Recitals	Ensembles	Classroom Instruction	Convocation	Recruitment
Tascam	The Tascam recorder will allow for high-quality recordings of performances, juries, and recitals. Faculty can provide students with accompaniment tracks, demos, and other audio for flexible practice and rehearsal scenarios. Student recordings can be incorporated into virtual lessons, juries, rehearsals, and recitals.	The Tascam recorder will allow students to provide ensemble directors with high quality recordings of their individual parts. These tracks can then be combined by the ensemble director to create a recording of a “virtual ensemble” that can be premiered to audiences via platforms such as YouTube.	The Tascam recorder can be used by faculty and students to record high-quality audio excerpts to incorporate into lectures, demonstrations, and group learning.	All of these tools can be used in the ways already described to facilitate virtual convocation performances, webinars, and training demos to the entire school.	Tascam, ProTools, and Source Elements can all be used in tandem to create high-quality virtual performances that can be shared online to recruit students from all across the globe. We can advance Setnor’s brand as a school that is at the cutting edge of music technology, giving our graduates an advantage in a job market that is fiercely competitive, stressed by the pandemic, and more focused on virtual methods of dissemination. The training that we will offer will send our students out into the world not only with their program’s set of skills, but also with the necessary understanding of music recording and editing.
Pro Tools	Pro Tools will allow students and faculty to edit these recordings. Students and faculty can create clean and high-quality tracks for lessons, juries, and recitals. Multiple audio tracks received from students and faculty can be assembled to form recordings of virtual choirs and ensembles.	Pro Tools will enable students and ensemble directors to effectively edit their individual recordings to create a high-quality audio product.	Pro Tools, furthermore, will allow students and faculty to refine audio that can then be incorporated into lectures, demonstrations, and group learning.		
Source Elements	Source Elements will allow for a more realistic and inspiring environment for virtual lessons, juries, and recitals. Faculty can use Source Elements to provide high quality lessons to students in situations where either the student or the faculty member cannot be on campus due to sickness, research events, recruitment conferences, etc. Juries and rehearsals could be held virtually in real time for solo and chamber repertoire. Audio from these Source Elements sessions can be recorded in a DAW (either internally for those who own Source-Connect Pro, or via Soundflower (free) for those using Source-Connect Standard). Source Elements sessions can also run alongside zoom, allowing users to record video, as well. Recorded audio and video from these Source Elements/Zoom sessions could then be assembled into public-facing videos, including virtual recitals.	Source Elements offers a low latency, high-quality audio connection between a limited number of users. This software can run alongside zoom, providing high fidelity audio with zoom- quality video. Duos, small chamber groups, and ensemble sectionals could meet over Source Elements. Recorded audio and video from these Source Elements/Zoom sessions could then be assembled into public- facing videos, including virtual recitals.	Source Elements could be used to stream lectures that include high-quality music examples.		
Specific Courses	All lessons, ranging from composition lessons to instrumental lessons and vocal lessons, will benefit from this technology, but vocal lessons and wind lessons will particularly benefit in the Covid-19 era.	All ensembles, including choirs, orchestra, wind ensemble, concert band, JCM Advanced Combo/Orange Juice, and the Morton Schiff Jazz Ensemble, the Brazilian Ensemble, and more.	All classroom courses, including music theory, ear-training, history, analysis, research, counterpoint, orchestration, arranging, and more.		

Logic Model

Activities	Outputs	Outcomes
<p>1.1 Receive quotes from 3 vendors.</p> <p>1.2 Procure 315 Tascam DR-40X handheld recorders.</p> <p>1.3 Procure related peripherals: microSD card, case, male to female adapter, headphones.</p>	<p>315 handheld recorders for all undergraduate and graduate students (including non-majors in our ensembles) and faculty members.</p>	<p>Every undergraduate and graduate student and faculty member can capture, record, and stream sound via a high quality portable digital audio recording and computer interface device (i.e. microphone, analog to digital converter, digital recorder) and transfer the digital sound files to their personal computers.</p>
<p>2.1 Receive quote for a 50 simultaneous seat License for Avid Pro Tools.</p> <p>2.2 Consult VPA ITS about purchasing licenses and setting up an on-campus VPN license key iLok server for Pro Tools.</p> <p>2.3 Procure 50 seat Pro Tools license for Setnor and set up license server in collaboration with VPA ITS.</p>	<p>Subscription to a 50-seat simultaneous use Pro Tools license for 1 year.</p>	<p>Every student and faculty member can edit and mix captured audio using an industry standard Digital Audio Workstation (DAW) on their personal computer to be shared through learning platforms (e.g. Blackboard).</p>
<p>3.1 Receive quote for Source-Elements.</p> <p>3.2 Test for use scenarios.</p> <p>3.3 Procure subscription for Setnor.</p>	<p>Subscription to a high-quality, low-latency audio streaming platform.</p>	<p>Studio lessons, music ensembles, and other identified classes can meet synchronously online.</p>

Timeline

May	June	July	August
1.1 – 1.3 Procure Tascams and peripherals by May 28.			
2.1 Receive Quote for 50 seat Pro Tools license by May 21 report.	2.2 Consult VPA ITS about purchasing licenses and setting up an on-campus VPN license key iLok server for Pro Tools.		2.3 Procure 50-seat Pro Tools license for Setnor and set up license server in collaboration with VPA ITS.
3.1 – 3.2 Test and receive quote for Source Elements by May 21 report.			3.3 Procure Source Elements licenses by August 15.
This working group continues to convene to consider other activities (e.g. training, adopting common platforms, online community engagement).			

COSTS**Audio Capturing****\$59,544**

315 Tascam recorders with accessories (e.g. hard case and SD card) for all faculty and students, including non-majors in our ensembles. Other personal accessories, like headphones, will be purchased by the students from an approved list.

This procurement needs to be initiated quickly. We are ordering a large number of these units and supply chain issues are expected as other music schools develop their own strategies for the coming AY and this type of recording device will be in high demand.

Audio Production**\$4,006**

50 licenses to Avid's Pro Tools for select students needing the full feature set. Other students and faculty needing reduced features will use the free version, Pro Tools First.

Audio Streaming**\$64,000**

50 licenses to the professional version of Source Elements' Source-Connect streaming software, with 250 licenses to their standard version.

Total: \$127,550

Appendix A: [Tascam DR-40X Portable Audio Recorders](#) and accessoriesSummary

High quality microphone, recorder, and audio interface.

Detailed Description

From B&H Photo Video:

“For podcasts, sound effects, and music recording applications, the Tascam DR-40X portable handheld recorder is capable of capturing up to four tracks of high-resolution audio with no external microphones required. Its onboard unidirectional condenser mics can be set for a wide or tight stereo image, and may be used simultaneously with the mic/line combo inputs. Equally adept as a handheld device or when used in stand- or camera-mounted setups, the DR-40X can handle anything from sampling sessions and interviews to podcasts and live concerts.”

The Tascam DR-40X is a versatile portable recorder that also doubles as an audio interface for Mac and PC computers. Users will be able to capture sound with the device independently using its integrated microphones and transfer the sound files to their computers via USB or use it as a direct audio input device for whatever software they are using that requires audio input.

Accessories include a microphone stand and adapter that the DR-40 can mount to, hard shell padded case, a SD memory card, and a pair of quality headphones. The headphones are necessary so everyone can have the same reference point for the audio we will all be sharing, and to discourage the use of low audio quality earbuds.

Setnor Remote Audio Technology Hardware Purchase 2020 / B&H as Vendor					
		TOTAL	\$77,767.20		
		Minus Estimated 20% Discount	\$62,213.76		
Quantity	Name	Part #	Description	B&H Price	Extended
315	Tascam DR-40X 4-Channel / 4-Track Portable Audio Recorder and USB Interface	DR-40X	Portable Recorder	\$179.00	\$56,385.00
315	SanDisk 128GB Extreme UHS-I microSDXC Memory Card	SDSQXA1-128G- AN6MA	SD Card	\$26.99	\$8,501.85
315	Pelican 1040 Micro Case	1040-025-100	Case	\$14.95	\$4,709.25
315	Samson MS45 Groove Pak Tripod Microphone Stand with Telescoping Boom	SAMS45	Microphone Stand	\$17.99	\$5,666.85
315	CAMVATE 1/4"-20 Male To 5/8"-27 Female Adapter for Microphone Stand	C1361	Adapter	\$7.95	\$2,504.25