Audio Engineering Society

Conference Paper

Presented at the AES International Conference on
Audio Education
2021 July 22–24, Online

This paper was peer-reviewed as a complete manuscript for presentation at this conference. This paper is available in the AES E-Library (http://www.aes.org/e-lib) all rights reserved. Reproduction of this paper, or any portion thereof, is not permitted without direct permission from the Journal of the Audio Engineering Society.

Lethbridge Lament - Exploring musical genres through experiential learning in the studio

Courtney McDermott[1], Amandine Pras[1,2]

[1] *Digital Audio Arts program, Department of Music, University of Lethbridge, Alberta, Canada*

[2] *Centre Georg Simmel, School for Advanced Studies in the Social Sciences (EHESS), Paris, France*

Correspondence should be addressed to Courtney McDermott (ca.mcdermott@uleth.ca)

ABSTRACT

Studio residencies and live events with visiting artists provide post-secondary audio educators with opportunities to involve an entire program in learning engineering and production practices, sociocultural aspects of music creation, and research methods. A Master of Arts student conducted a case study to examine the creative processes of The Sweet Boys with video artist Nicole Cobb. Her analyses of an interview with the band, observation notes from recording sessions, and participation in pedagogical assignments underline how popular music subgenres are connected to sociology, musicology, and audio production techniques. We discuss how these pedagogical approaches facilitate experiential, situated, and integrated learning of the communication, inter-personal, and critical thinking skills required to challenge the culture of the commercial recording studio.

1 Introduction

This paper highlights pedagogical approaches for experiential learning through studio residencies and events at the University of Lethbridge (UofL) with The Sweet Boys, a genre-eclectic American band, accompanied by video artist Nicole Cobb. During their first studio residency on Oct 26th-Nov 1st, 2018, The Sweet Boys drew upon Brian Eno's [1] and Terry Riley's [2] creative processes of using the studio as a musical instrument and compositional tool to create new songs through improvisation and listening sessions. The last night, the band performed these songs at the campus bar, The Zoo, as part of *AES Fest* hosted by the UofL AES Student Chapter. Pras received funding from the Faculty of Fine Arts to support the travel expenses of the band and Cobb for a second studio residency and series of events on Nov 1st-8th, 2019, including the screening of Cobb's *The Sweet Boys: Unravelling the Mirror*, a film edited from footages of the 2018 residency; and a UofL Recital Hall performance with live video and multichannel audio.

The education contributions of this paper are three-fold. McDermott reports on a case study as part of her Master thesis that examines the sociological, musicological, and technical aspects of the composition and production processes of The Sweet Boys during their 2018 residency. Throughout the paper, we detail "cognitive apprenticeship" [3][4] opportunities of integrated and situated learning that the two studio residencies and series of events have offered to UofL students. In addition to the benefits of assisting and engineering recording sessions and live events with visiting artists, learning opportunities included mixing assignments in stereo and binaural; curating and promoting events; participating in discussions with the artists; and completing and publishing research studies, i.e., this paper, and a study about analog versus digital

mixing [5]. Finally, Pras explains how these teaching strategies illustrate her pedagogy that aims to enhance experiential learning and work ethics in audio education with research-enriched methods in project-based environments.

In the conclusion, we discuss how these teaching strategies not only convey the behavioral codes of the commercial recording studio but also challenge the usual "hierarchy of roles" [6] that contributes to systemic social discrimination within the workplace [7]. An Annenberg study highlighted that only 2% of the record producers credited on 2012-2017 Billboard Top 100 hits were women, only 0.3% of these producers were women from underrepresented racial/ethnic groups, and that no woman has ever won the Best Producer in Non-Classical Grammy Award [8]. Therefore, Dr. Paula Wolfe discourages women to pay for audio education that is likely to perpetuate their exclusion in the field [9]. As an attempt to deconstruct the patriarchal culture and gendering of the studio, we propose to remove commercial constraints and to focus on collective creativity in an inclusive learning environment.

2 The Sweet Boys and Nicole Cobb

The Sweet Boys feature Mikey Holmes on keys, vocals, and electronics; Kevin Copeland on guitars and vocals; Andrew Emge on drums and auxiliary percussions; and Logan Miley on electronics. The four band members graduated from the Music Technology program at the Steinhardt School of Culture, Education, and Human Development at the New York University (NYU) in 2015, where Pras had been an adjunct faculty since 2012. Impressed by the production of *Sweet Boys II* in her digital recording techniques course during their sophomore year, she encouraged them to attend her advanced audio production course designed for graduate students during their junior year. Miley joined the band and took the advanced course the year after. When she was sure that none of the band members would take her NYU courses anymore, Pras proposed to help them to complete their first album titled, *Foible Pangs* (2015)[1]. Also, she invited Holmes to improvise on vocals and electronics with Daniel Carter and Todd Capp, two 'instigators' of free jazz in their 70s, as part of her postdoctoral ethnography of free improvisation scenes in New York City (NYC) [10]. Following the study, Holmes started using improvisation as a process of music creation and performed in Capp's *Mystery Train* collective.

Video artist and experimental filmmaker Nicole Cobb graduated from the NYU Tisch School of the Arts' Film & Television program. In Nov 2016, Pras invited Cobb to screen her film *Places* at Stetson University (FL) where she was a Visiting Professor of Digital Arts, and she hired Holmes to host improvisation workshops with her students. In Fall 2018, Pras received funding to hire Cobb to teach workshops in sound production and postproduction for film and TV just before the beginning of the first Sweet Boys' studio residency. Then, Cobb filmed the recording sessions to produce an audio-visual portrait of the band, using ideas that she had developed for an aborted project with a British Rock band. Finally, Cobb coached three DAA student volunteers to capture three sets of the AES Fest at the Zoo on Nov 1st, 2018. She edited an excerpt of The Sweet Boys' set that Pras mixed in stereo and binaural to apply for funding to support the 2019 visit.

During their NYU studies, The Sweet Boys gained music theory, audio production, programming, and electronic skills that have enabled them to create music in studio environments with a large range of acoustic, electric, analog electronic instruments, digital audio workstations with samplers, and real-time processing programs. This musical and technology literacy extends their individual music performance backgrounds and provides them with

[1] *Foible Pangs* (2015) features bassist Alex da Silva and was mastered by Alan Silverman, adjunct faculty of the NYU Music Technology program. This album was experienced by Holmes as a 'Pop challenge'.

unlimited possibilities for producing genre-blended tracks. The Sweet Boys' Lethbridge reunion in Oct 2018 (Figure 1) was an appropriate time for them to merge the diverse genre influences and experiences they had accumulated since graduation: Copeland, Emge, and Miley have toured as a Pop-Rock trio named *The Big Net*; Holmes and Miley have released several solo and duo albums of Ambient; Copeland pursues an Americana project; and Emge plays drums in several Indie Rock bands.



Figure 1: The Sweet Boys' 2018 reunion show.

3 Case Study Methodology

3.1 Observations and Data Collection

McDermott used 'direct observation' methods that involve collecting personal data pertaining to the behaviours of individuals' or groups' surrounding specific events or circumstances [11]. These methods were applied in participant and non-participant contexts. McDermott conducted direct participant observations when she performed technical tasks as a studio assistant and tracking engineer during the 2018 recording sessions in UofL's Studio One. These tasks included wrapping cables; setting up microphones; running *Pro Tools*; and adjusting musicians' headphone monitoring using the *SSL Duality*'s cues and the *KLANG:vier* binauralizer. As an active member of the UofL AES Student Chapter, she also mixed on the *MIDAS DM16* during The Sweet Boys' set at The Zoo on Nov 1st, 2018. When performing these tasks, she maintained an audio engineer persona and so kept a professional distance with the band members as to not interrupt their creative process.

McDermott also carried out direct non-participant observations when other students were scheduled to assist the band or engineer the sessions. The studio residency schedule was designed so that every student of Pras' beginner and advanced courses on audio production techniques was assigned to participate in a three-hour session. This assignment was assessed by a written report on the technical tasks that each student performed in the studio, and on their observations of the creative processes of the band. Remaining spots were offered to every other student in the program who was interested in getting involved. Pras produced the evening sessions when she was done with her other duties. During the entire residency, McDermott took notes about the artistic and technical decisions that The Sweet Boys made as they improvised, listened to their improvisations, and created new songs. Her notes included pictures of the instrument set up, the microphone list and placements, the changes throughout the week, and the interactions among band members and with Pras.

McDermott conducted a semi-directed interview with the band members during their dinner break between two recording sessions the evening of Nov 28th, 2018. The informal context of this interview allowed for the musicians to remain relaxed and let ideas flow between them, much like in their studio sessions. This interview aimed to clarify how the concept of genre inspired their production processes, and to investigate how they perceived the influence of genre aesthetics on their music outcomes. The questions also pursued a deeper understanding of why and how the band used audio production techniques to achieve specific stylistic choices. As such, the interview questions were designed before and during the studio residency. Some questions focused on the group as a whole and were answered by a consensus or conferral from the band members. Additionally, questions pertaining to specific instruments or equipment were directed to the

relevant individual band members. The questions were as follows:

- *What has influenced the sound of your music or inspired you? (asked to the entire band)*
- *What genre(s) would you classify yourselves playing in? (asked to the entire band)*
- *What determines which sounds you will live-process* [real-time process] *or not? (asked to Miley)*
- *In what ways do you use samples? (asked to Miley and Holmes)*
- *What have you done with your snare drum and why? (asked to Emge)*
- *What mic choices/placements are you choosing for your stylistic/mood setting qualities*? *(asked to the entire band)*

After the studio residency, McDermott and students from the advanced audio production course were required to mix one song from the recording session of a rehearsal for The Sweet Boys' set at The Zoo. This session took place at the time of class in Studio One, thus providing students with a live-off-the-floor experience for which Pras' teaching focused on techniques to avoid or creatively use leakage when capturing and mixing such sessions. Cobb coached three students to film the Nov 1st AES Fest while Pras supervised a couple of DAA volunteers to record the signal from the stage microphones captured from the USB output of the MIDAS DM16, a *Neumann KU 100* dummy head and a *Blumlein Royer SF12* positioned in the middle of the audience, and three (omni) *DPA 4006* touching The Zoo's back walls. This live recording of three sets[2], i.e., *Tanner Cyr*, a Rock band with four DAA students; The Sweet Boys; and *Jane Doe*, a Punk-Rock band with four DAA alumni, was used for a mixing assignment in stereo and binaural in Pras' course on audio spatialization techniques in Fall 2019. Also, McDermott got access to all the Pro Tools sessions from the studio residency and the *YouTube* video excerpt of The Zoo's performance for further analyses for her thesis and this paper.

From the improvised-based recording sessions of the 2018 studio residency, Pras edited and mixed two songs in Spring 2019, namely *The Hound* and *Rainy Drums*, to contribute material for a mixing study that was carried out by four DAA students in her applied research course. This study aimed to examine the use of analog versus digital mixing tools for different aesthetics of popular music subgenres [5]. Methods for this study incorporated interviews of mixing engineers and a perceptual experiment that compared mixes created on the SSL Duality and replicated with the *Wave SSL plugin* bundle, and vice versa. McDermott was a listening participant of this experiment. She also took notes when she helped Pras and two DAA volunteers to 'reamp' piano, electronic, electric guitar, and vocal tracks.

3.2 Other Integrated Pedagogical Events

The 2018 and 2019 residencies offered other learning experiences for McDermott and UofL Music Department undergraduate students. In Oct 2018, The Sweet Boys facilitated a discussion about avant-garde creation based on texts from *Audio Culture: Readings in Modern Music* [12], and a Q&A about pursuing a musician or audio engineer career after graduating. Also, Holmes and Miley detailed their analog electronic setups and real-time digital processing patches in *Reason* and *Ableton Live* in Dr. Georg Boenn's audio synthesis course.

In 2019, the band joined video artist Nicole Cobb for the Q&A that followed her screening of *The Sweet Boys: Unravelling the Mirror* in the Recital Hall, as part of the *Music at Noon* series. That afternoon, Emge taught a drumming masterclass to students of percussion instructors Adam Mason and Joe Porter. Meanwhile, the rest of the band performed ambient music in the Recital Hall. During this performance, students from Boenn's audio synthesis course learnt real-time processing techniques; students from Pras' audio spatialization techniques course rehearsed for

[2] The AES Fest at the Zoo on Nov 1st, 2018 also included *Biloxi Parish*, a local professional band for the fourth set.

the public event by experimenting with different multichannel panning and mixing techniques; and students from McDermott's beginner audio production techniques course could ask questions to the artists after the performance. Therefore, almost all the students from the DAA program took part of this multi-purpose event.

Holmes and Cobb also presented a two-hour masterclass about the use of pre-recorded audio and visual material in live performances, which was open to all students from the Music Department. Later, The Sweet Boys created *Smokers' Paradise* during Pras' advanced audio production techniques course. This song was used as a mixing assignment for that course. On Nov 8th, about ten DAA students contributed to the setup, sound check, light design with drama instructor Lee Burckles, mixing, video and audio capture, and tear down of The Sweet Boys' show with Cobb's live video and multichannel audio in the Recital Hall, as part of the *Faculty Artists and Friends Series*.

3.3 Data Analysis

McDermott analysed her ethnographic data based on a multidisciplinary theoretical framework that she developed in her master's thesis literature review. Her research approach combines three discipline perspectives to examine composition and production processes in depth, namely sociology of music [14], musicology, and audio production techniques. The sociology of music component draws upon two frameworks: Lena's concept of avant-garde genre lifecycles [13]; and Born's first two planes of her Mediation Theory that "amounts to socialities engendered by musical practice and experience" and "socialities of the studio - manifest in who is able to exercise power and control" [14]. Figure 2 shows how McDermott applied this framework to analyse collected data from direct and non-direct participation observations during the 2018 studio residency; the transcription of the semi-directed interview with the band; and her notes from attending all the events, reviewing the Pro Tools sessions, and watching the YouTube video excerpt.

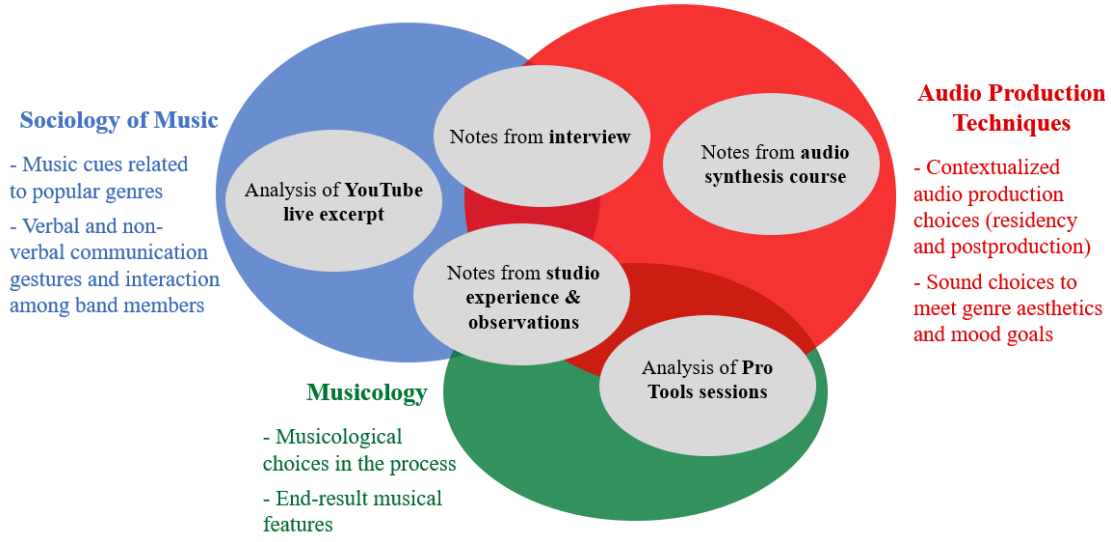


Figure 2: Analysis framework of the data corpus

4 Results

4.1 Sociology of Music

Analyses revealed five areas within the sociology of music that influenced The Sweet Boys' creative process of songwriting in the studio, namely the natural and sociocultural environment, politics, genre traditions, communication, and equipment. Indeed, the band's new songs drew upon their subconscious experience with the local landscape, climate, and music scene during their first visit. For instance, they wrote and performed *Lethbridge Lament*, based on melancholic thematic material within the Country genre aesthetic, to convey the vibe of "the city that always sleeps" (Copeland). Contemplating Southern Alberta's desertic coulees while riding the bus from the Calgary airport, Copeland wrote a poem that became the lyrics of *The Hound*. In terms of political influences, the band tracked *Gather What's Mine* with distant distressed screams to emphasize lyrics about American citizens' unrest with Trump's government policies.

The band's comradery and division of labour enabled each of the members to articulate compositional ideas with references to popular subgenres and their associated stylistic sound choices. In the interview, they listed Talk Talk, Neil Young, and Boards of Canada as shared artist references among each other; and Post-Rock, Math Rock, Shoegaze, Electronic Rock, and Americana as overarching aesthetics for their new album. Each of these styles was illustrated with artist names, album references, and the different song ideas that they were working on during the studio residency. They also elaborated on the instruments and effect treatments that they used for each song, with the goal of creating an overall 'airy' or 'floaty' mood for their album with an atmospheric quality.

Shifts from subconscious to conscious influences continually occurred during the studio sessions as experimentation enabled the band to broaden the cultural references of their songs beyond Western European popular music traditions. For instance, improvisation sessions with instruments from the Global Drums collection generated new sounds that shaped whole compositions. As an example, the thematic motif of *E Major Minor Briggs* came from trying alternative performance techniques: bowing and using mallets on chimes.

Musicians' gestures were consciously triggered by band members' interactions through non-verbal communication during instrumental performances. While playing together in the studio and on stage, we observed a call-and-response communication pattern among the band members. Fundamental in the African American Jazz tradition [15][10], though historically found globally outside of the Western music tradition as well, this call-and-response pattern has influenced many avant-garde creative processes [12]. This way, each member was building on another's improvised ideas to develop new songs. Also, Miley processed his bandmates' sounds to add his artistic voice to the conversation. For example, his spontaneous manipulation of Emge's improvised drumming succeeded in generating unexpected results that Emge would then adapt to by proposing a new groove. This continual reciprocity fuelled The Sweet Boys' creative process and was made explicit by the band while reviewing their improvisations in listening sessions.

Equipment failures, referred to as "happy accidents" (Miley), were consciously incorporated into The Sweet Boys' songwriting process. For instance, technical issues with a tape looper brought Miley to program a digital looper, which inspired the band to layer new looped sounds with previously recorded material from home and from Lethbridge improvisation sessions. The band utilized this digital looper as a key compositional component for *E Major Minor Briggs* and *Rainy Drums*.

4.2 Musicology

The Sweet Boys expanded the instrument set of the UofL's Studio One, i.e., a drumkit, a *Yamaha C6*

piano, a *Fender Princeton* guitar amplifier, and an *Ampeg BA15* bass amplifier, with their own equipment, including a snare drum, several guitars, keys, electronic devices, and amplifiers. During the listening sessions, they used musicological terms to describe and refer to recorded material and ideas that could be kept for them to create new songs. When tracking, they sometimes asked each other about instrumentation, key signature, harmony, or specific pitches that another bandmate had played during improvisations. This affected textures, arrangement, and rhythmic structures of new compositions.

For example, the driving groove and dense timbre choices of *I Can't Be Your Man* came out of Emge's improvised rhythms on the drumkit. These triggered Copeland's guitar hook and Miley's live processing with delay effects. The drums' rhythmic, timbres, and delay pulled Holme's droning synthesizer sounds forward with momentum. Emge dampened his snare and attached a small splash cymbal to its side with Moongel[3] to create a clap/double snare sound with a sharper transient. He also incorporated a "thumpy bass sound" (Emge) from his kick drum for specific sections of the song, which resulted in the perception of a 'truncated rondo ABACBA' form (Figure 3). In summary, the song evolves from a 'thin' solo of the drum riff to a 'thick' build-up with the keys and guitars that is enhanced by the real-time processing of the drums and additional synthesizers; then it drops out to a texture that could create a bridge to the next song of the set. Although there is harmony within the guitar hook, it acts more as a supportive low-end basis for a song that is primarily based on timbres and textures.

[3] A self-adhesive gel pad that can be applied to the surface of most percussion instruments. It is used to change the overall sound of the instrument by dampening or eliminating unwanted resonances.

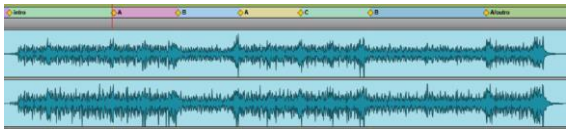


Figure 3: *I Can't Be Your Man* rough stereo mix labeled with 'truncated rondo ABACBA sections.

Other improvised musicological aspects influenced The Sweet Boys' creative process in the studio. For example, Copeland repeated one of Holmes' improvised chord progression, which he complexified to shape the harmony of *E Major Minor Briggs*. This change caused the entire band to run through the chord progression multiple times, each time layering new performance ideas i.e., using different textures, voicing, tempi, and articulations.

These examples illustrate how compositional ideas were developed within a musicological framework. If the band could not push a musical idea further or felt they needed some direction, they would move on with new improvisations until Pras could accompany their songwriting process in evening sessions. Her role as producer was to guide the band in focussing on material with the highest potential, based on her own tastes and intuitions, and on her observations of the band members' emotional responses while listening to their takes. From this workflow, eight songs were tracked and ready to be rehearsed during class time the night before AES Fest.

4.3 Audio Production Techniques

During recording sessions, acoustic and electric instruments were processed using only a small amount of equalization, and even less compression, in contrast to copious amounts of reverberation, delays, and saturation. The Sweet Boys also used effects to process pitches and performance speed. The overall sonic goal of an 'ambient and atmospheric' quality for the album drove Pras and the band to choose and place microphones to achieve a 'dreamy' sound. For instance, Pras'

"standard 3-point micing technique" [16] [4] was applied using three *Neumann U87* microphones whose frequency curve features a flat midrange with a bump at 8kHz of around 5dB[5] to add depth to Holmes' acoustic piano performance. Two U87s were setup as an AB spaced pair placed underneath the open lid of the piano, though under the piano cover to reduce leakage from the drumkit. The third U87 was positioned under the piano board to capture the low-end of the instrument and to create a '3D' sensation as it was time-aligned to the AB pair with a delay of 11ms. To capture the room sound, two DPA 4006 microphones were placed above the band, pointing at the ceiling, and touching the live room walls. This placement avoids wall reflections and thus gives the illusion of a room being three times bigger than reality. These 'wall' microphones were time-aligned with a 7ms-delay to a *Neumann M149* placed between the piano and the drumkit to create an 'atmospheric' space.

To enhance the new sound produced with the auxiliary percussions and alternative playing techniques, the band explored different microphone polar patterns to manipulate the proximity effects of each instrument. An omnidirectional combined with a bi-directional polar pattern in a Mid-Side pair setup was chosen to attain a "high frequency vibe" (Holmes) that was critical to integrate tambourine, bells, chimes, and crotales.

Each of Holmes' and Miley's electronic setups included a mixer in the live room whose stereo main outputs were sent to the SSL Duality and Pro Tools for recording, headphone monitoring, and sub-mixing. Holmes adjusted panning and equalization on his *Yamaha O1V* mixer that received signal from a *DX7*, the *Moog Voyager*, and his Reason patches. His electronic stereo mix, as well as SSL Duality sub-mixes of drums, guitars, and room microphones were reinjected into Miley's tape looper, launch pad, analog effects, and Ableton Live patches to be real-time-processed with reverberation, delays, panning, equalization, compression, distortion, and other effects. A mono mix from Miley's setup was sent to a miked guitar amplifier and reinjected in headphone monitoring to inspire the rest of the band.

In Spring 2019, The Sweet Boys and Pras exchanged emails during the mixing process of *The Hound* and *Rainy Drums*. Because the band requested a 'soupy' sound, Pras decided to 'reamp' the piano and electronic tracks through *Meyer Sound* speakers in the Recital Hall, and the guitar and vocal tracks through a cranked guitar amplifier in the Fine Arts Building's main stairwell (Figure 4).



Figure 4: 'Reamping' of guitar and vocal tracks.

For the main guitar track of *The Hound*, a M149 with a directive polar pattern was placed halfway up one flight of stairs and facing the opposite direction of the amplifier to capture reflections from the concrete building surfaces without focusing on the direct sound. This microphone was time-aligned on the original recording with a delay to reduce phasing. Copeland appreciated the new sound of his guitar that he described as "a dinosaur".

5 Experiential Learning

This case study based on ethnographic methods provides evidence for McDermott's thesis focus that promotes the need to incorporate audio production techniques with musicological features in genre-based music recommendation algorithms used in streaming platforms. Her data analysis validates the theoretical framework that she designed to examine popular music songwriting and production processes

[4] See Pras' MuPaCT lecture on June 17, 2020.
[5] See the Neumann U87 microphone specifications.

according to concepts from the sociology of music, musicology, and audio production techniques. Her exploration of The Sweet Boys' characterization and manipulation of popular subgenre aesthetics confirms the relevance of identifying intertwined sociological aspects with past artistic references and alternative uses of musical instruments and audio technologies in contemporary music creation [13]. As an example, during the 2018 class discussion about avant-garde creative processes [12], the band members elaborated on Terry Riley's influence on their artistic vision. They also explained that they aimed to create music that would transcend the listener's conscious mind rather than to fill up stadiums. Moreover, in the Q&A about pursuing a career after graduating, they emphasized the importance of taking opportunities such as accepting this invitation to Lethbridge, because these enhance an artist's network and experiences.



Figure 5: Emge screams "Terry" at The Zoo.

The Sweet Boys' artistic vision and ethics can be observed through the lens of the first two planes of Born's Mediation Theory that consists of the politics of recording and imagined communities [14]. For instance, when performing at AES Fest, Emge echoed the class discussion by screaming "Terry" (Figure 5) as a cue for the band to transition from the improvised introduction to *The Hound*. The DAA students caught the reference and screamed "Terry" back. Meanwhile, Miley real-time processed all the screams that were picked up by a *AKG 414* microphone located in the middle of stage. This moment dramatically increased the emotional tension of the beginning of the set while making the DAA students feel acknowledged as an integral part of the creative process of *The Hound*. It blurred the expertise gap between the bands and the students' experience as performers and engineers. Similarly, the fact that the band welcomed student's questions and technical suggestions in the studio dismantled the "hierarchy of roles" as established in the studio internship model [6].

Following the 2018 residency, Pras noticed new integrations of electronic sounds and avant-garde processes in her students' Pop-Rock projects. To expand on this experiential learning, she proposed to expose students to mixed art approaches by integrating Cobb's live video in the 2019 studio residency and events. Also, the postproduction process of *The Sweet Boys: Unravelling the Mirror* was made explicit in Cobb and Holmes' masterclass on the use of pre-recorded audio and visual material in live performances. For instance, Cobb displayed her 1960s painting techniques with water and oil manipulations, her video feedback loop setup with a digital camera filming an analog monitor at a different frame rate, and her Jitter patch concepts. Throughout the residency, she projected live video from the control room onto a large screen in the live room (Figure 6). DAA students could thus experience her visual approach that mirrored the band's sonic improvisations when they assisted or engineered recording sessions. Then, Cobb used the same setup and process for the final live show with multichannel sounds in the Recital Hall (Figure 7).

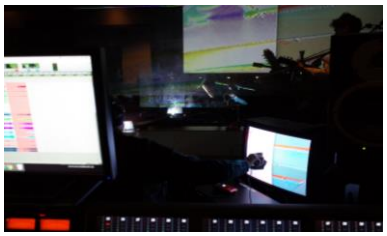


Figure 6: Cobb projecting feedback video effect from the control room to the live room.

6 Towards Inclusive Audio Education

Both visits of The Sweet Boys and Cobb were a success among the DAA student cohort who

developed a relationship with the artists by taking part in their creative process. The 2018 visit enabled Pras to introduce her students to mixed genres and avant-garde music creation in Lethbridge, a remote conservative city in Southern Alberta. The UofL AES Student Chapter sold about 200 tickets for their first AES Fest at The Zoo, which has motivated them since to curate, promote, and host one cross-genre festival per semester. Students' enthusiastic feedback in their studio experience reports helped Pras to raise funding for the 2019 visit, so to extend the 2018 pedagogical approaches by incorporating multichannel audio and mixed-art processes, which pushed the limits of the UofL facilities. Making art goals at the centre of situated learning strategies have contributed to bridge some of the cultural gaps between the digital audio arts and Western art music programs. Meanwhile, the visiting artists benefited from the facilities and opportunities that residencies in postsecondary art institutions can offer outside of commercial settings.

The cognitive apprenticeship and situated teaching strategies [3][4] outlined in this paper combine research-enriched methods and project-based environments that engage students to participate in diverse levels of creative cognition. This was made possible thanks to the trust between the artists and Pras, grounded on previous projects that connected art, research, and education. Since she started teaching at the UofL in Fall 2017, Pras has funded and organized three other studio residencies and series of events with visiting artists, namely Jonathan Kay who performs Free Jazz and North-Indian Classical music and who studies East-West Psychology in San Francisco, California; pianist Luciane Cardassi who teaches collaborative composition in Salvador, Brazil; and Issa Traore a.k.a. Ken Lagare who produces Electronic Popular music in Bamako, Mali. These visits aimed to bring artistic, cultural, and intellectual value to audio-related activities in the Music Department while enabling UofL students to think and create beyond the trends of the local art scene.



Figure 7: Sound check in the Recital Hall.

Identified creative processes in McDermott's case study highlighted subconscious to conscious inspiration in the laboratory that a studio represents for contemporary artists. Witnessing and taking part in these processes have the potential for students to learn the much-needed communication and inter-personal skills to work with artists in commercial recording studios [6][17]. However, it should be noted that the described collaborative environment for artistic creation was free of commercial purposes. The deal between the institution and the artists was that they could use the facilities and recorded materials for their own goals, in exchange for their patience and open-minded involvement with the students. While students were taught to respect the artists' creative workflow, they could ask questions to them during the breaks, propose technical solutions, and comment on artistic achievements. Also, they could fail technical tasks without consequences during recording sessions, rehearsals, and live event setups. This learning situation thus strongly differs from studio internships and 'real-world' professional settings that tend to reproduce the patriarchal and toxic culture of the commercial recording studio [7][8]. In conclusion, we advocate for designing approaches for experiential learning in the studio with extra care to provide the next generation of recordists with empowering experiences that will help stop the legacy of a discriminative culture.

Acknowledgements

This research would not have been possible without The Sweet Boys' and Nicole Cobb's talent and willingness to facilitate an encouraging and open

learning environment during their two visits in Lethbridge. We would also like to thank technical specialist Chris Morris, light designer Lee Burckles, associate professor Dr. Georg Boenn, percussion instructors Adam Mason and Joe Porter, the AES UofL Student Chapter, the Faculty of Fine Arts, Music at Noon, and the Faculty Artists and Friends Series at the University of Lethbridge for funding and contributing to these events.

References

[1] Eno, B., "The Studio as a Compositional Tool, in C. Cox (Ed), *Audio Culture: Readings in modern music*, 115—126 Bloomsbury (2017 [1966]).

[2] Potter, K., *Four Musical Minimalists: La Monte Young, Terry Riley, Steve Reich, Philip Glass*. Vol. 11, Cambridge University Press (2002).

[3] Walzer, D.A., "The Curricular Soundtrack: Designing Interdisciplinary Music Technology Degrees Through Cognitive Apprenticeship and Situated Learning", in *New Directions for Computing Education*, 143—160, Springer (2017).

[4] McNally, K., & Seay, T., "Studying Recording Techniques", in Zagorski-Thomas, S. & Bourbon, A. (Eds), *The Bloomsbury Handbook of Music Production*, 233—247, Bloomsbury (2020).

[5] Chambers-Moranz, R., Pras, A., Thomas, N., "The Generation Gap – Perception and Workflow of Analog", Audio Engineering Society Convention 147 (2019).

[6] Thompson, P., *Creativity in the Recording Studio*, Springer International Publishing (2018).

[7] Brooks, G., Pras, A., Elafros, A., Lockett, M., "Do we really want to keep the gate threshold that high?", *Journal of the Audio Engineering Society*, vol.69 no.4, 238—260 (2021).

[8] Smith, S., Choueiti, M., Pieper, K., Case, A., Villanueva, S., Onyeabor, O., & Kim, D. *Inclusion in the Recording Studio?: Gender and Race/Ethnicity of Artists, Songwriters & Producers across 600 Popular Songs from 2012-2017*, Annenberg Inclusion Initiative (2018).

[9] Wolfe, P. *Women in the Studio: Creativity, Control and Gender in Popular Music Sounds Production*, Routledge (2019).

[10] Pras, A., & Lavergne, G., "Sampling in improvisation: Meeting of two instigators of free jazz with a young artist from the noise scene in New York", *Musicae Scientiae*, vol.19 no.4, 433—451 (2015).

[11] Yin, R., *Case Study Research Design and Methods*, Sage (2014 [2009]).

[12] Cox, C. (Ed), *Audio Culture: Readings in modern music*, Bloomsbury (2017).

[13] Lena, J., *Banding Together: How communities create genres in popular music*, Princeton University Press (2012).

[14] Born, G., "Mediation Theory", in Shepherd, J. & Devine, K. (Eds), *The Routledge Reader of the Sociology of Music*, 359—367, Taylor & Francis (2015).

[15] Berliner, Paul F., *Thinking in jazz: The infinite art of improvisation*, University of Chicago Press (2009).

[16] Pras, A., "Standard 3-point Micing Technique (Advanced)", in Bell, A. P. (Ed.), *The Music Technology Cookbook: Ready-Made Recipes for the Classroom*, Oxford University Press (2020).

[17] Bielmeier, D., "Audio recording and production education: Skills new hires have and where they reported", *Journal of the Audio Engineering Society*, vol.64 no.4, 218—228 (2016).