

Reimagining multilingualism and musicianship: *Communities of Practice* as an explanatory framework for analyzing the effects of the COVID-19 pandemic

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Abstract

*The period from March, 2020 - March, 2021 was dominated by the COVID-19 pandemic and its enormous effects across the globe and the many institutions and services that regulate our daily lives – school, work, distribution of goods, health care, fitness, sports, religious services, stores, births and burials, travel, gatherings, celebrations and many others. The focus of the current analysis involves two particular **communities of practice** affected by the pandemic -- musicians and multilinguals. Using a computer-based survey format, the research team constructs the foundation for understanding the impact of COVID-based restrictions on the ability to participate in typical contexts that are central to multilingualism and musicianship, analyzes empirical data and other evidence on how these communities are coping under these constraints, and provides insight into new, emerging questions for future examination of significant COVID effects on the developing dynamics in these communities. Data collection began September, 2020 and extended through the end of February, 2021.*

Introduction

One of the most powerful explanatory frameworks in contemporary sociolinguistic theory is the concept of **Communities of Practice**:

“A community of practice (COfP) is a group of people brought together by some mutual endeavor, some common enterprise in which they are engaged and to which they bring a shared repertoire of resources, including [but not restricted to] linguistic resources, and for which they are mutually accountable....Communities of practice are not flee-floating but are linked to one another and to various institutions. They draw on resources with a more general history – languages as well as various kinds of technologies and artefacts” (McConnell-Ginet 2003: 69-97).

In the current study, we apply the framework of *communities of practice* (COfP) and show that musicians and bi/multilinguals can be understood in a more profound way using this lens. The members of COfPs are drawn together by a “mutual endeavor” (whether it be making music or sharing speech communities across different languages), to which they bring a “shared repertoire of resources” (their linguistic and musical knowledge skills). Furthermore, these different types of communities of practice must be understood in the context of their dynamic relationships with each other, with the institutions to which they are connected, and the resources critical to their realization.

The importance of understanding the constant dynamic of communities of practice and their relationship to institutions, as well as their implementation of ‘shared repertoires of resources’ and the realizations of mutual responsibility in diversity, becomes tantamount in providing a method for analyzing the specific impact of COVID on multilingualism and musicianship.

Meyerhoff and Strycharz (2013:428) enhance the framework of communities of practice in focusing on the *perspective and experience of participants* within these spaces in understanding and determining their “subjective experience of the boundaries between their community and other communities.” This aspect of communities of practice becomes interesting in the current analysis as we compare and contrast the outcomes of a period of severe restrictions on any community-based behaviors and processes. The focus on the participants’ perspectives and experiences provides a framework for how our research team designed the questions for analysis.

The conclusions from our research team’s article, “Best Practices in Collecting and Encoding Behavioral Data for Analysis in fMRI Studies of Multilingualism and Musicianship,” (2021) are included in the methodological framework for our data collection. There are many experiences that do not fit into pre-established categories, and thus require more open-ended responses. Including more complex individual narratives helps to minimize *essentialist bias* and provides for richer responses. The process of collecting behavioral data was informed by “specific features drawn from sociolinguistic research on behavioral data collection, including, where possible, broad, open-ended questions and face-to-face interactions in real time” (Folks et al. 2021).

Short summary of current research on the effects of the COVID-19 pandemic: Musicianship and Multilingualism

With the onset of the COVID-19 pandemic, various investigations have arisen aimed at studying its impacts on these communities of practice. Below is a short review of some of the published research and meta-analyses.

Andrews (2020) focuses on outcomes in disembodied teaching and learning in one of the early publications that discussed the additional challenges of online teaching in comparison with face-to-face *in person* instruction. In Vance et al. (2021) published a review of articles addressing how Covid affected singers. They found 56 peer-reviewed articles and 18 primary articles between 2019-2020. Effects included long-term changes in lung capacity and paralysis of laryngeal nerves. Swarbrick et al. (2021) contrast the difference in experiences of feeling connected in live concert performances vs. pre-recorded concerts and embodied connections to the performance. Crosby & McKenzie (2021) examine the negative impact of COVID-19 on Australian musicians, including employment and income. Cohen & Ginsborg (2021) survey two different groups of musicians in

the UK – mid-career and “seasoned”. Their results show common outcomes across these two groups, including feelings of loss due to lack of performance opportunities and actual making of music, as well as concerns about the future of the music profession.

Research on language, including second language instruction in adults (Klimova 2021) and child language acquisition (Charney et al. 2021), provide revealing evidence about the difficulties that result from online language instruction in the first case and the lack of peer community interactions (called “peer talk”), as well as missing visual articulatory and facial cues that children need for appropriate pragmatic development.

There is only one article that mentions COFPs in higher education (Grunspan et al. 2020) and their importance for community resilience.

Hypotheses

An essential component in belonging to a community of practice is the ability to contribute to a *shared repertoire of resources*, including linguistic resources, for which members are mutually accountable (McConnell-Ginet 2003: 69-97). Thus, communities of practice cannot function when members are unable to contribute to or drawn upon their shared repertoires. Given unprecedented restrictions of normal daily activities and social distancing as a result of COVID-19, we anticipated that the quality and quantity of opportunities to engage in multilingual and musical communities of practice would be deeply affected in the following ways:

1. Limited opportunities to perform music in groups and language face-to-face in real-time would decrease the availability and quality of the social interactions that are crucial to multilingualism and musicianship.

In the interview data collected in our previous publication, we saw the significance of the social aspects of music, such as having a musical social circle and playing and listening to music with friends, to the development and maintenance of music (Folks et al. 2021). The development and maintenance of multilingualism is similarly tied to social aspects of speech communities and communities of practice, such as in-country immersion and face-to-face communication with members in the relevant speech communities (e.g. family, friends, colleagues, etc.).

However, COVID-19 shifted the primary method of social interaction from in-person engagements in real time to online platforms, reducing the quantity and quality of opportunities for face-to-face interaction for musicians and multilinguals. We expected that this shift would have negative impacts on the critical social aspects of both multilingualism and musicianship. The possibility of endangering oneself or others by visiting family members, as well as closed borders and travel restrictions, greatly diminished opportunities to travel and language with loved ones, and moving these interactions online diminished their quality. For musicians, the ability to rehearse and perform music in a group setting was reduced or eliminated, proving particularly devastating

for professional musicians, who may have even lost their source of income or experienced career setbacks. For instance, musicians who play wind instruments could not wear masks while playing, and singing and playing wind instruments in groups were considered high-risk activities due to the potential for virus transmission. Therefore, musicians were likely restricted to online or individual practice only.

2. COVID-19 would be especially detrimental to students learning music and language.

We also predicted that COVID-19 would negatively affect musical and linguistic instruction for both teachers and students because of the importance of face-to-face instruction in real time. Learning music and language involves careful attention to pitch, intonation, and rhythm, which are inhibited by the temporal lag and poor sound quality of virtual communication. Furthermore, factors like background noise, internet challenges, and the additional action of *unmuting* may deter students from speaking in an online language class (Andrews, 2020: 5). Language learning also requires careful observation of the speaker's face, and music learning may require attention to posture, hand placement, intricate movements, or other details of technique, all of which are difficult or impossible to observe over video chat. Depending on the number of participants, the instructor may not be able to see all students on one screen at one time, or image size and quality may be greatly reduced, leaving them unable to monitor students' activities during class for both proper technique and engagement in class activities.

3. COVID would decrease people's ability to engage in their most enjoyable musical and linguistic experiences.

Finally, in our previous publication, we observed that many of people's most vivid music-related memories and most enjoyable aspects of their musical and linguistic lives are related to social and performance experiences (Folks et al. 2021). Many people are transported to another time or place by a particular piece of music, usually involving past memories of loved ones or particularly meaningful performances. Therefore, we predicted that the loss of opportunities to perform for a live audience or language in community with others as a result of COVID-19 would have a profoundly detrimental impact on multilingual speakers and musicians since these most positive and salient aspects of music and language were taken away from them.

Methods

Data Collection

The COVID-19 pandemic limited our ability to collect data in person. However, we capitalized on the considerable rise in the use of online networks during the shelter-in-place and quarantine protocols of COVID-19. There has been a 60% increase in the use of Internet services since the start of the pandemic, as people turned to online applications for school and work (De' et al., 2020). The desire to communicate with loved ones during such an isolating time also bolstered the use of social networks on the Internet, further increasing the general surge in the digitalization of society (De' et al., 2020).

Our team explored different methods of data collection during this unique time in which many people shifted to *virtual interactions*. Overall, an online survey proved to be the most optimal method. It was the safest way to gather data for both researchers and participants because it did not require inessential social interactions, and as higher screen times became normalized during the pandemic, it was more reasonable to ask participants to answer a lengthy online survey.

Before delving into our specific study, it is important to note some of the more general reasons behind our use of an online survey distribution method. An online survey offers an effective alternative to other traditional methods of data collection such as telephone interviews, mail, and other on-site techniques. Our team asked a large number of comprehensive questions in order to best capture a diverse set of data points concerning musical and multilingual behaviors. The online survey method was the most optimal platform to accomplish this goal because it was a financially efficient manner of garnering large amounts of information in a relatively short time frame. Telephone or video interviews would have necessitated more time for scheduling on the part of researchers and participants, and the online survey allowed more time to be devoted to data collection and analysis.

More traditional methods of data collection such as random-digit telephone surveys have declined in efficiency in recent years due to decreasing response rates and a social shift away from talking over the phone (Loomis & Paterson, 2018). Online technologies continue to improve in quality and accessibility, and electronic surveys have provided a way for research teams to accumulate large quantities of data at a low-cost rapid pace (Loomis & Paterson, 2018). Additionally, Internet-based surveys have a swift dissemination and response time (Evans & Mathur, 2005); this factor was especially appealing for our study since we wanted to capture the immediate effects of the pandemic on the emotional experiences of musical and multilingual communities of practice.

Finally, online survey methods allow for larger sample sizes, which decreases the probability of significant variance between subgroups and participants and increases the likelihood of more consistent results (Witte, Amoroso, & Howard, 2000). Although item nonresponse rates continue to be an issue with longer surveys, Internet-based methods of data collection have a lower rate of item nonresponse relative to more traditional methods such as mail surveys (Denscombe,

2006). However, this problem is important to consider because our survey included numerous expansive open-ended questions, thus increasing the potential that the item nonresponse rate could be higher than normal.

Survey Protocol & Participants

One hundred and forty-one subjects fully participated in the study. Thirty-three (23.4%) of participants indicated that they were both musicians and bi/multilinguals. Eighteen (12.8%) of participants indicated that they were musicians and not bi/multilinguals. Ninety (63.8%) of participants indicated that they were bi/multilinguals and not musicians.

We reached study participants via electronic distribution of the survey. Participants had to identify themselves as either multilingual, musician, or both and provide demographic information about the extent of their musical or multilingual experience. We had no previous empirical knowledge of each participant's behavior or linguistic and musical histories. Our survey questions were designed to assess participants' linguistic and musical experiences pre-COVID and how the COVID-19 pandemic affected musical and multilingual communities of practice.

The majority of the survey was completed by 141 participants, ages 18-60, with different questions depending on the multilingual/musicianship/both proficiency status of the subject and applicability of question to the individual. All surveys were completed in English, but we acknowledged that each survey could have been administered/completed in the subject's preferred language for their comfort.

Each subject was required to read and confirm participation with an informed consent form that outlined the purpose of our study and the subject's role in the study. Participants were informed about their individual confidentiality in the survey, their right to decline participation or withdraw, and were required to provide a signed statement of their consent.

The purpose of our study was stated to participants as follows: "The LMD Bass team is interested in exploring the short and long-term effects of the COVID-19 pandemic on persons who are involved in music and bi/multilingualism in different communities and levels of interaction. This short survey is designed with those communities of practice in mind."

The survey was distributed to students, faculty, and individuals with or without relation to Duke University. The research team is based at Duke University and had wide access to different pockets of the Duke community with known high-end musical and/or linguistic proficiency. The survey was also directly distributed to people with established high-end proficiency, such as conductors, instructors, professional musicians, etc. We focused on acquiring a diversity of responses in terms of age and extent of multilingual/musicianship experience. The survey is

anonymous, and age and gender identity were the only two demographic variables measured, so we cannot identify our subjects or how they encountered the survey.

Measures

Our primary goal was to gain a substantial amount of both behavioral and quantitative information about each participant (Table 1). In the musicianship portion, questions such as “*How many hours per day do you currently play your instrument?*” and “*Please state your music experience in levels of musical training*” were designed specifically to assess subjects’ musical proficiency. Other questions, such as “*What are the most enjoyable aspects of your musical life?*” asked participants to explore the emotional aspects of their musical lives.

Questions in the multilingual portion of the survey were focused on participants’ linguistic backgrounds and proficiency. For example, the survey asks questions about participants’ specific communities of practice such as, “*What exposure have you had to your first language, second language, ... n-th language in your family, ... community, ... study/living abroad.*” Other questions sought to gauge proficiency through an assessment of background, such as “*In which countries do you have relatives and friends whom you visit frequently*” and “*Why did you decide to learn your second language.*” Overall, this background information was crucial because it gave us insight into participants’ backgrounds and baselines established before COVID-19, allowing us to more clearly see the effects of the pandemic.

The last component of the survey focused on the pandemic’s influences on various aspects of participants’ musical or linguistic experiences. For instance, we asked specific questions about how COVID-19 affected participants’ ability to practice music, whether through changes in income, opportunities for rehearsal and social practice spaces, or motivation to continue practicing at home. We also allowed participants to state what, if any, performance and rehearsal options were still available to them. For the multilingual portion, we asked about the pandemic’s effect on speech practice and language learning abilities. This included their interactions and access to communication with others (domestically or abroad), course delivery of language courses, income, and travel. Finally, we asked participants to share their thoughts about language learning/teaching if they were a student or teacher to gain more insight into how specifically learning or teaching a new language has been impacted by COVID-19.

Data Analysis

The research team created an online Qualtrics survey to collect participant responses and facilitate distribution. Results from the survey were filtered; if the participant had completed 50% or more of the survey, their survey responses were kept. The research team used R to sort the overall response datasets into smaller data sets. If a participant identified themselves as a musician

or both a bi-/multilingual and a musician, their response was part of the “Musician” sub-dataset. Similarly, if a participant identified themselves as a bi-/multilingual or both a bi-/multilingual and a musician their response was part of the “Bi-/Multilingual” sub-dataset. The research team also used R to sort through responses and quickly analyze quantitative data. R was also used to create visualizations.

TABLE 1. Survey items			
	Musician	Bi-/Multilingual	Both
Number of survey questions asked	29	24	50

TABLE 2. Survey items presented to all participants	
Survey Item	Response type
Please select the most relevant choice. <ul style="list-style-type: none"> • I am a professional musician, I am a student majoring or minoring in music, I play a musical instrument or sing every day for at least 2 hours per day, OR I am a faculty member teaching music. • I am a bilingual who uses 2 languages every day, OR I am a multilingual who uses 3 or more languages every day. • I am a musician and a bilingual/multilingual. (cf. numbers 1 and 2 above) 	Multiple choice (single answer)
Age	Open-ended response
Gender Identity	Open-ended response (to mitigate essentialism)

TABLE 3. Musician survey items: survey items presented to participants who indicated “I am a professional musician, I am a student majoring or minoring in music, I play a musical instrument or sing every day for at least 2 hours per day, OR I am a faculty member teaching music.” or “I am a musician and a bilingual/multilingual. (cf. numbers 1 and 2 above)”	
Survey Item	Response type
Please select the option that best applies to you. <ul style="list-style-type: none"> • Instrumentalist • Vocalist • Conductor • Instructor/Faculty 	Multiple choice (single answer)

<ul style="list-style-type: none"> • Student OR Currently receiving formal musical training 	
What musical instrument(s) do you play?	Open-ended response
How long have you been playing?	Open-ended response
How many hours per day do you currently play your instrument(s)?	Open-ended response
How many hours per day or per week do you currently play your instrument(s)? (Please specify per day or per week) (<i>Question for musicians who were “Student OR Currently receiving formal musical training” only</i>)	Open-ended response
What are your major musical genres? <ul style="list-style-type: none"> • Classical • Folk • Jazz • Orchestral • Popular • Other (with an open-ended response box) 	Multiple choice (multiple answer)
When did you initiate your career in conducting and how?	Open-ended response
Please state your music experience in the levels of music training given below. <ul style="list-style-type: none"> • High school • Some college • Associate’s degree • Bachelor’s degree • Master’s degree • PhD or professional degree 	Open-ended response
If applicable, what other types of musical training did you receive?	Open-ended response
Have you completed any musical examinations, juries, or received awards? <ul style="list-style-type: none"> • Yes • No 	Multiple choice (single answer)
(If responded “Yes” to the previous question) When, where, and which ones? (Referring to music examinations, juries, awards)	Open-ended response
What are the most enjoyable aspects of your musical life?	Open-ended response
What are some of your most vivid music-related memories?	Open-ended response
Do you have memories that also include specific musical moments (performing, listening, etc.)?	Open-ended response
Can a piece of music take you to a different place and time? <ul style="list-style-type: none"> • Yes • No 	Multiple choice (single answer)

Please share some examples of music making taking you to a different place and time.	Open-ended response
With whom do you play music?	Open-ended response
Are there any musicians in your family or amongst your friends? <ul style="list-style-type: none"> • Yes • No 	Multiple choice (single answer)
How has your family's/friend's musicianship impacted you?	Open-ended response
How has COVID-19 affected your ability to be a musician? <ul style="list-style-type: none"> • Positive • Neutral • Negative 	Multiple choice (single answer)
Which of the following performance and rehearsal options are currently available to you? <ul style="list-style-type: none"> • In-person and live • Virtual (live) • Virtual (pre-recorded) • None • N/A 	Multiple choice (multiple answer)
Compare the following categories PRE- and DURING COVID, noting changes in terms of number of hours spent (please also specify per day, per week, etc.). <ul style="list-style-type: none"> • Private lessons • Coursework • Warmup • Formal training • Performance • Rehearsal 	Open-ended response
In what way has COVID-19 affected your income from music? <ul style="list-style-type: none"> • Positive • Neutral • Negative • N/A 	Multiple choice (single answer)
In what way has COVID-19 affected available rehearsal/practice space for you? <ul style="list-style-type: none"> • Positive • Neutral • Negative • N/A 	Multiple choice (single answer)
In what way has COVID-19 affected your motivation to play? <ul style="list-style-type: none"> • Positive • Neutral • Negative • N/A 	Multiple choice (single answer)
Please share any additional information on how COVID-19 has affected your ability to be a musician?	Open-ended response

TABLE 4. Bi-/multilingual survey items: survey items presented to participants who indicated “I am a bilingual who uses 2 languages every day, OR I am a multilingual who uses 3 or more languages every day.” or “I am a musician and a bilingual/multilingual. (cf. numbers 1 and 2 above)”

Survey Item	Response type
Please list all of the countries where you have lived and the length of time, including your birthplace.	Open-ended response
Please list the first language(s) of your parent(s)/guardian(s).	Open-ended response
Where did your parent(s)/guardian(s) grow up?	Open-ended response
What languages(s) does your family use with you (distinguish context if different for each language)?	Open-ended response
What exposure have you had to your first language, second language, ... n-th language in your family?	Open-ended response
What exposure have you had to your first language, second language, ... n-th language in your community?	Open-ended response
What exposure have you had to your first language, second language, ... n-th language in your study/living abroad?	Open-ended response
In which countries do you have relatives and friends whom you visit frequently?	Open-ended response
How has COVID-19 affected your ability to interact as a bi/multilingual and use languages?	Open-ended response
In what way has COVID-19 affected your accessibility to persons in your bi- and multilingual communities? <ul style="list-style-type: none"> • Positive • Neutral • Negative • N/A 	Multiple choice (single answer)
In what way has COVID-19 affected travel for you? <ul style="list-style-type: none"> • Positive • Neutral • Negative • N/A 	Multiple choice (single answer)
In what ways has COVID-19 impacted your interactions with others in general? <ul style="list-style-type: none"> • Positive • Neutral • Negative • N/A 	Multiple choice (single answer)
In what ways has COVID-19 impacted your income? <ul style="list-style-type: none"> • Positive 	Multiple choice (single answer)

<ul style="list-style-type: none"> • Neutral • Negative • N/A 	
<p>In what ways has COVID-19 impacted your course delivery of language courses?</p> <ul style="list-style-type: none"> • Positive • Neutral • Negative • N/A 	Multiple choice (single answer)
Please share any comments about language learning and/or teaching during COVID-19 if you are a student or teacher.	Open-ended response
<p>Please fill in information for all levels of education you have completed and their language(s) of instruction. (If multiple languages apply to one category, separate by comma) (Language of instruction refers to the language in which the course is taught.)</p> <p>Question for each level: “Foreign language(s) studied”, “How many semesters?”, “Language of instruction”</p> <ul style="list-style-type: none"> • High school • Some college • Associate’s degree • Bachelor’s degree • Master’s degree • PhD or professional degree 	Open-ended response
Have you taken the SAT-II, IB, AP, Oral Proficiency, TOEFL, or other standardized tests of a language? If so, please list the test and your scores.	Open-ended response
Why did you decide to learn your second language?	Open-ended response
Do you have ADHD /ADD or any other learning disorders or cognitive impairment? If yes, please explain.	Open-ended response
Do you have any history of hearing or visual problems? If yes, please explain.	Open-ended response
<p>Please list all of the languages you have ever learned in the order in which you learned them. Complete the table, using a scale of 1-7 for how often you do the indicated activities (1=never, 7=often)</p> <p>Question for each language: “Please state your proficiency level (Beginner, Intermediate, Advanced, Native-like/Native)”, “Age (in years) at which you learned the language”, “How often do you read in this language?”, “How often do you write in this language? (i.e., texting, formal writing, letters, etc. Please specify.)”, “How often do you speak in this language?”, “How often do you listen to this language being spoken? (i.e., through TV, radio, YouTube, etc. Please specify.)”</p>	Open-ended response

TABLE 5. Survey items explaining salient characteristics of musician communities of practice and characteristics of this community of practice *during-COVID-19*

Survey Item	Musician	
	Salient Features	During COVID-19
How many hours per day do you currently play your instrument(s)?	X	X
How many hours per day or per week do you currently play your instrument(s)?	X	X
What are the most enjoyable aspects of your musical life?	X	X
What are some of your most vivid music-related memories?	X	X
Do you have memories that also include specific musical moments (performing, listening, etc.)?	X	
Please share some examples of music making taking you to a different place and time.	X	
With whom do you play music?	X	
How has your family's/friend's musicianship impacted you?	X	
How has COVID-19 affected your ability to be a musician?		X
Which of the following performance and rehearsal options are currently available to you? (In-person and live, virtual (live), and/or virtual (pre-recorded))		X
Compare the following categories PRE- and DURING COVID, noting changes in terms of number of hours spent (please also specify per day/week/etc.). (Private lessons, Coursework, Warmup, Formal training, Performance, Rehearsal)		X
In what way has COVID-19 affected your income from music?		X
In what way has COVID-19 affected available rehearsal/practice space for you?		X
In what way has COVID-19 affected your motivation to play?		X
Please share any additional information on how COVID-19 has affected your ability to be a musician.		X

TABLE 6. Survey items explaining salient characteristics of bi-/multilingual communities of practice and characteristics of this community of practice during-COVID-19

Survey Item	Bi/Multilingual	
	Salient Features	During COVID-19

What languages(s) does your family use with you (distinguish context if different for each language)?	X	X
What exposure have you had to your first language, second language, ... n-th language in your family?	X	X
What exposure have you had to your first language, second language, ... n-th language in your community?	X	X
What exposure have you had to your first language, second language, ... n-th language in your study/living abroad?	X	
In which countries do you have relatives and friends whom you visit frequently?	X	
How has COVID-19 affected your ability to interact as a bi/multilingual and use languages?		X
In what way has COVID-19 affected your accessibility to persons in your bi- and multilingual communities?		X
In what way has COVID-19 affected travel for you?		X
In what ways has COVID-19 impacted your interactions with others in general?		X
In what ways has COVID-19 impacted your income?		X
In what ways has COVID-19 impacted your course delivery of language courses?		X
Please share any comments about language learning and/or teaching during COVID-19 if you are a student or teacher.		X
Why did you decide to learn your second language?	X	

Results

Survey Respondents

Out of the 141 respondents, 33 participants (23%) indicated that they were both musicians and bi/multilinguals, 18 participants (13%) indicated that they were musicians and not bi/multilinguals, and 90 participants (64%) indicated that they were bi/multilinguals and not musicians (Table 8, Figure 1).

Participants' Communities of Practice

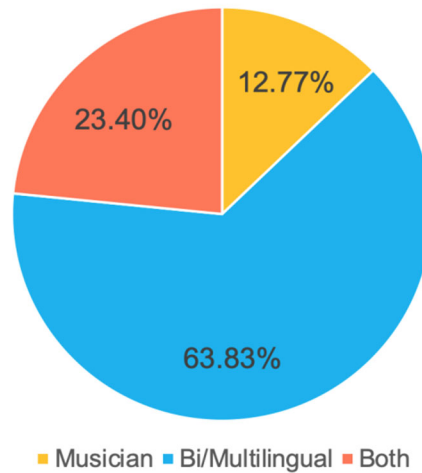


Figure 1: Distribution of communities of practice across survey respondents. Approximately two thirds of the respondents self-identified with bi-/multilingual communities, while only about 13% reported to be only in musician communities. The remaining portion, approximately a quarter, reported belonging to both multilingual and musician communities of practice.

Our team assessed both the characteristics of the communities of practice of musicians and bi/multilinguals and changes to them as a result of the COVID-19 pandemic.

Salient Characteristics of Musical Communities of Practice

Multiple questions in our survey assessed salient characteristics of musical communities of practice. A total of 51 (36.2%) of the survey participants were part of the musician community of practice. Within these respondents:

1. 56.9% of them were instrumentalists;
2. 29.4% were students or individuals currently receiving formal music training;
3. 7.8% were vocalists;
4. 3.9% were instructors;
5. 1.9% was a conductor (**Table 9**).

In the responses to the question “*What are the most enjoyable aspects of your musical life?*”, there were 74 discernable enjoyable aspects mentioned by the 51 participants, as some participants mentioned multiple aspects.

1. 32.4% of these 74 responses directly referenced a social aspect of music being one of the most enjoyable aspects of a musician’s life. These responses referenced making music with others and engaging with others to do so, camaraderie with fellow musicians, connecting with others through performing, and building community;

2. 12.2% of the responses directly referenced performing, which is another social component of a musician's life, and responses included playing for friends and family, concertos with orchestra and chamber music, playing at events, and playing for large audiences;
3. Responses also referenced many other aspects of workings of this community of practice, such as composing, playing pieces the musician connects with, and using music as a method for stress relief, relaxation, and an emotional outlet.

The responses to the two survey questions about music-related memories (*"What are some of your most vivid music-related memories?"* and *"Do you have memories that also include specific musical moments (performing, listening, etc.)?"*) also indicated the importance of listening to music, enjoying music with loved ones, playing/singing in groups or with family at specific places or events, conducting, writing, composing, and watching others play.

Furthermore, there were 93 responses to the question *"With whom do you play music?"* (once again, respondents were able to list multiple responses if they chose to do so).

1. 19.4% of the responses (18 responses) referenced playing solo;
2. 80.6% of them (75 responses) referenced playing with other people. Many respondents listed family, friends, colleagues, music teachers, and music groups such as band, acapella group, chamber musicians, symphony orchestras, and choirs.

Our team also investigated the role that specifically family and friends play in a musician's life by asking *"How has your family's/friend's musicianship impacted you?"* Some of the most common responses referenced gaining encouragement from them to play or rehearse, being surrounded by music, and creating memories, friendships, and relationships around music. Another major theme was the inspiration gained from family and friends' musicianship, along with the ability to learn from these close individuals.

Impact of COVID on Musical Communities of Practice

The present survey revealed that musical communities of practice have suffered devastation from the isolation required by the pandemic's new social norms. When asked how the COVID-19 pandemic has affected their ability to be a musician,

1. 66.7% of participants reported that they have been impacted negatively;
2. 19.6% impacted neutrally;
3. 13.7% impacted positively.

Availability of practice spaces followed a similar trend:

1. 75% of participants reported having less available rehearsal/practice space during the pandemic;
2. 11.4% reported a neutral change;

3. 13.6% reported positive change (Figure 2).

Distribution of 'In what way has COVID-19 affected available rehearsal/practice space for you?' among participants who indicated they were musicians

Many more people who reported that COVID-19 negatively affected availability of rehearsal/practice space

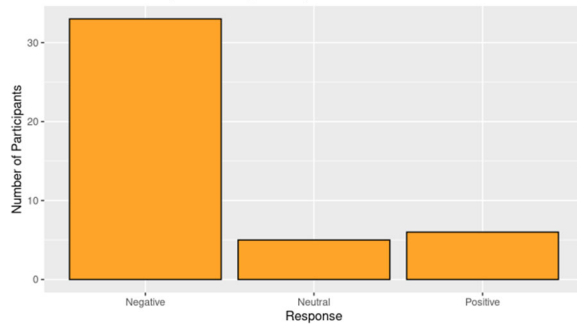


Figure 2: Distribution of “In what way has COVID-19 affected available rehearsal/practice space for you?” among participants self-identifying as part of the musician community of practice. Many more people reported that COVID-19 had a negative impact on rehearsal/practice space.

However, musicians’ motivation to play followed a different pattern:

1. 42.9% of participants, indicated that their motivation to play has actually increased during the pandemic, albeit not by a large margin;
2. 24.5% indicating it has neutrally affected their motivation;
3. 32.7% indicating it has negatively affected their motivation (Figure 3).

Distribution of 'In what way has COVID-19 affected your motivation to play?' among participants who indicated they were musicians

Relatively uniform distribution

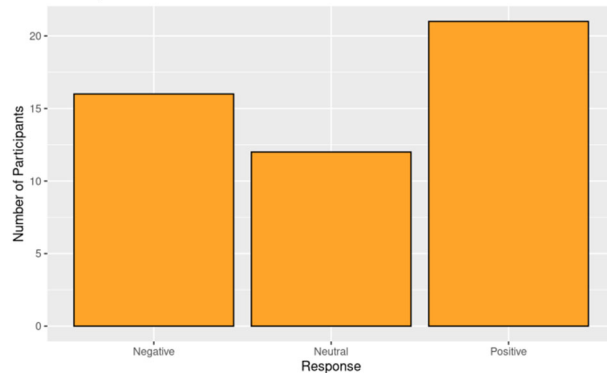


Figure 3: Distribution of “In what way has COVID-19 affected your motivation to play?” among participants self-identifying as part of the musician community of practice. A majority of participants indicated that their motivation to play has actually increased during the pandemic, albeit not by a large margin.

When asked to share details regarding how COVID-19 has impacted their ability to be a musician,

1. 17.8% of responses directly mentioned that it has made it difficult or impossible to perform;
2. 22.2% stated that the largest toll has been on the ability to play in groups because of restrictions and difficulty associated with rehearsing in-person during the pandemic;

3. 24.4% of responses indicated that the pandemic has allowed for more time to practice, but 15.6% of responses mentioned the impoverished quality of practice and teaching in a virtual setting (Figure 4).

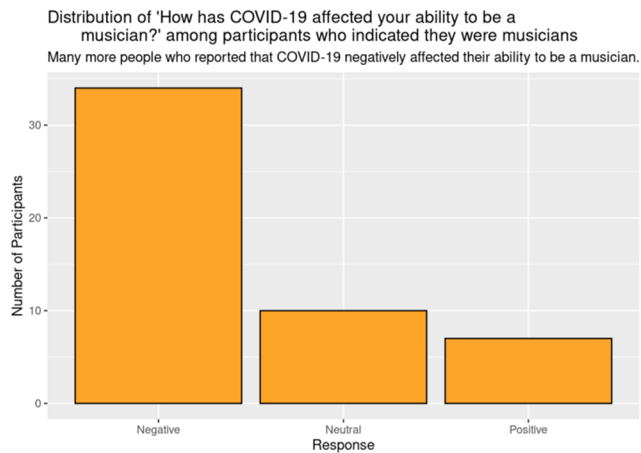


Figure 4: Distribution of “In what way has COVID-19 affected your ability to be a musician?” among participants self-identifying as part of the musician community of practice. More people reported that COVID-19 negatively affected their ability to be a musician.

Overall, participants expressed negative emotions associated with less pleasure, motivation, and inability to connect with fellow members of their communities of practice.

The present survey also allowed for identification of shifts in time commitment towards activities related to this community of practice. The difference in hours per week dedicated to being in rehearsal, doing music-related coursework, formal musical training, performing, and rehearsing all showed a negative change from before the pandemic (see Appendix). The largest differences were observed between time spent rehearsing and time spent performing, dropping an average of 2.07 hours and 2.11 hours respectively from before the pandemic (Figures 5 and 6). The time spent in warm-up, however, was mostly unchanged.

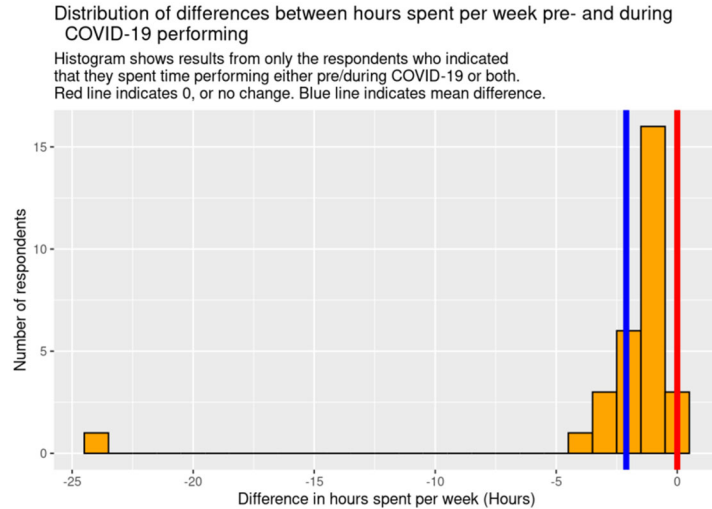


Figure 5: Distribution of differences between hours spent per week pre- and during COVID-19 performing among participants self-identifying as part of the musician community of practice. Mean difference between hours spent per week pre- and during COVID-19 performing was -2.11, indicating an average decrease by 2.11 hours.

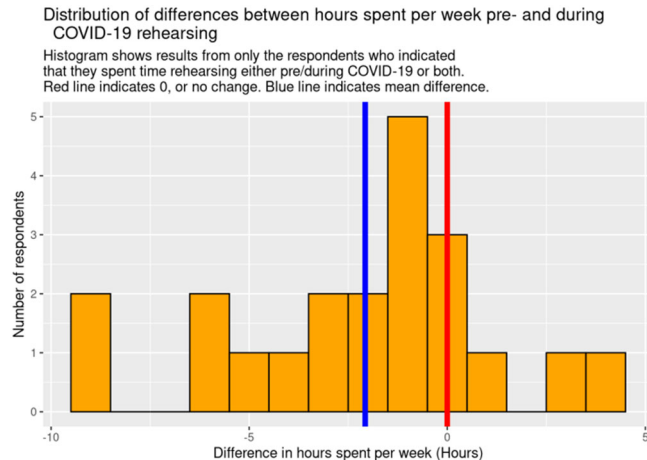


Figure 6: Distribution of differences between hours spent per week pre- and during COVID-19 rehearsing among participants self-identifying as part of the musician community of practice. Mean difference between hours spent per week pre- and during COVID-19 rehearsing was -2.07, indicating an average decrease by 2.07 hours.

Bi/Multilingual Community of Practice

Our team proposed questions to assess normative functions of the bi/multilingual communities of practice. We asked questions tracking how respondents learn, use, and are exposed to their perspective languages. For example, in analyzing the question “what exposure have you had to your first language, second language,... N language in your family”, our team found that out of 90 responses, there were 30 direct mentions (33.3%) of speaking with family members, as well as 14 mentions (15.6%) of speaking multiple languages at home. Some respondents specified

that they spoke different languages to different family members (ex: speaking to parents' L1 to them and English to siblings).

One subset of respondents mentioned that exposure to languages with family was a daily occurrence, whether it be restricted to auditory listening, or multiple aspects of language usage and production (including speaking, listening, and writing). Another subset of respondents wrote that exposure to the languages they use came from visiting the country where their family lives or used to live. There were a few respondents who also mentioned watching movies and listening to music as additional means of language exposure.

Our team also asked about exposure of respondents' language(s) in their communities. Out of 104 responses:

1. 28.8% (30 respondents) noted that their language(s) exposure was from daily activities in their speech communities. Examples of interactions included talking with adult community members at grocery stores, shopping centers, hospitals, restaurants, and during sport activities;
2. 26.9% (28 direct mentions) of school and education-based language(s) exposure;
3. 15.4% (16 direct mentions) of exposure through friends;
4. 3.8% (4 mentions) of work-related exposure;
5. 4.8% (5 mentions) of exposure through pop culture;
6. 1.9% (2 mentions) of online exposure;
7. 10.6% (11 respondents) noted that they had minimal to no exposure to their non-L1.

Our survey also asked "In which countries do you have relatives and friends whom you visit frequently." A total of 27 countries were noted by respondents. Among the countries, the following top 10 emerged (from a total of 104 responses):

TABLE 7. Responses to "In which countries do you have relatives and friends whom you visit frequently." Note: Percentage values have been rounded.	
Country	Percentage of participants
United States	28%
China	9%
India	9%
Russia	4%

Italy	4%
England	4%
France	4%
South Korea	4%
Canada	4%
Spain	4%

Impact of COVID on the Bi/Multilingual Community of Practice

In our survey, our team asked participants an open-ended question on how COVID-19 has affected their ability to interact as bi/multilinguals and use their languages. Some respondents noted that the format of language usage and interactions have changed, with exposure predominantly in virtual formats and phone calls.

Responses to the question of how COVID-19 affected their ability to interact as a bi/multilingual and use languages were variable:

1. 17.4% of respondents noted that their L2 use had decreased;
2. 12.6% of respondents noted an increase in multiple language use;
3. 41.4% of respondents expressed that their language use was not affected by COVID-19;
4. 12.6% noted that for one or more of their languages, usage was restricted to speaking on video or phone calls;
5. 8.0% noted that COVID-19 had cancelled their study abroad plans;
6. 8.0% were unable to travel back to their home countries.

The following responses were given to the question “in what way has COVID-19 affected your accessibility to persons in your bi/multilingual community”:

1. 38.8% of participants felt they had been negatively impacted;
2. 44.8% responded they were neutrally impacted;
3. 16.4% felt they were positively impacted (Figure 7).

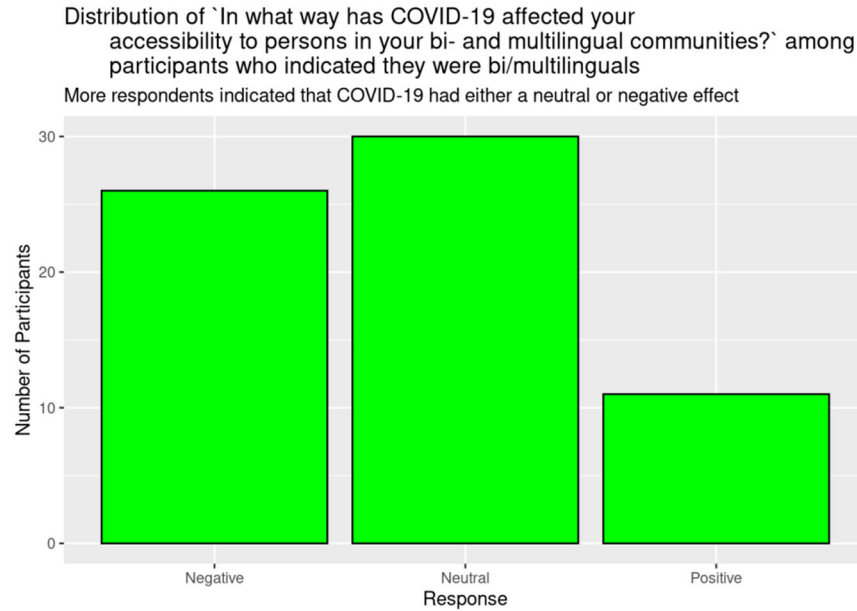


Figure 7: Distribution of “In what way has COVID-19 affected your accessibility to persons in your bi- and multilingual communities?” among participants self-identifying as part of the bi-/multilingual community of practice. Most people reported that COVID-19 had a neutral or negative impact.

Among the bi/multilingual respondents, a large majority, 91.9%, stated that COVID-19 had impacted their travel; 2.7% felt neutrally impacted, and 5.4% felt positively impacted (Figure 8).

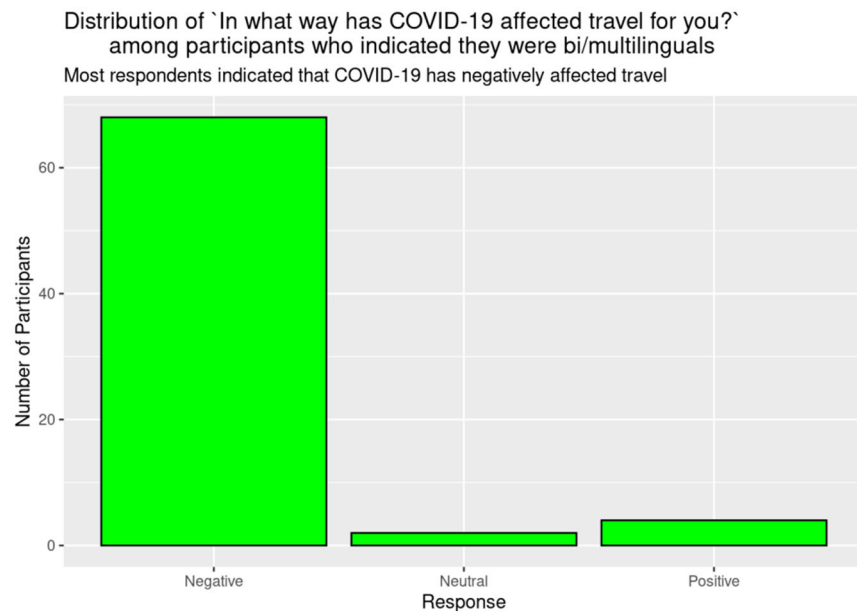


Figure 8: Distribution of “In what way has COVID-19 affected travel for you?” among participants self-identifying as part of the bi-/multilingual community of practice. Most people reported that COVID-19 had a negative impact on travel.

Data on COVID-19 impact on interactions with others showed the following:

1. 78.1% responded that interactions had been negatively impacted;
2. 13.7% neutrally impacted;
3. 8.2% positively impacted (Figure 9).

Distribution of 'In what ways has COVID-19 impacted your interactions with others in general?' among participants who indicated they were bi/multilingual:
Most respondents indicated a negative effect

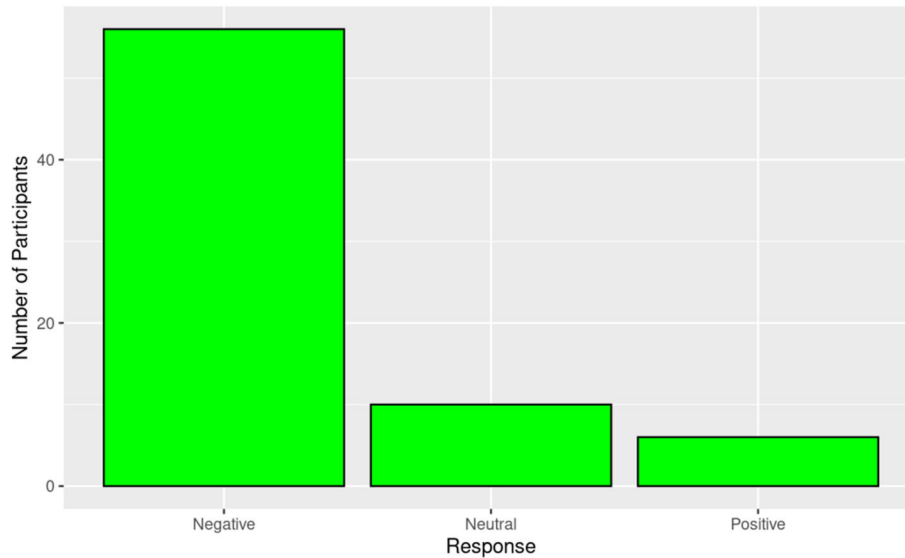


Figure 9: Distribution of “In what way has COVID-19 impacted your interactions with others in general?” among participants self-identifying as part of the bi-/multilingual community of practice. Most people reported that COVID-19 had a negative impact.

COVID-19 has also had a generally neutral or negative impact on bi/multilingual participant income:

1. 48.8% neutral impact;
2. 39.0% negative impact;
3. 12.2% positive impact (Figure 10).

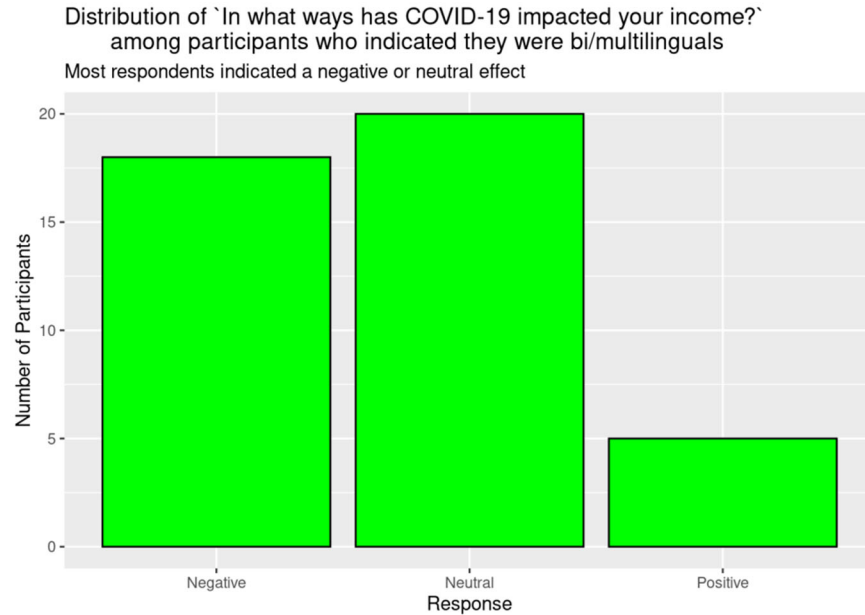


Figure 10: Distribution of “In what way has COVID-19 affected income for you?” among participants self-identifying as part of the bi-/multilingual community of practice. Most people reported that COVID-19 had a negative or neutral effect on income.

For language learning in a classroom environment between teachers and students, responses indicated that COVID-19 has had an overall negative impact:

1. 59.5% of respondents reported a negative impact;
2. 32.4% reported a neutral impact;
3. 8.1% reported a positive impact (Figure 11).

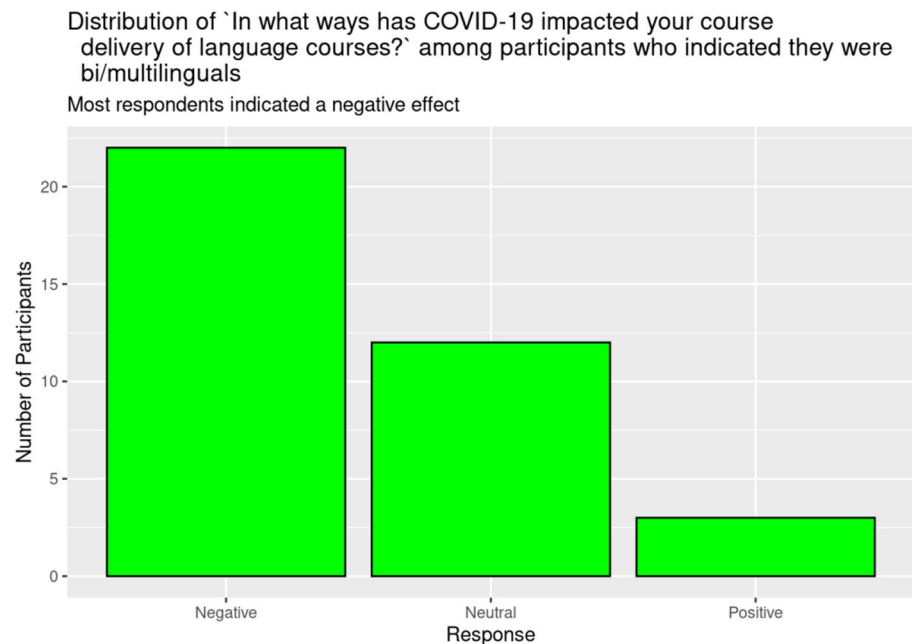


Figure 11: Distribution of “In what way has COVID-19 impacted your course delivery of language courses?” among participants self-identifying as part of the bi-/multilingual community of practice. Most people reported that COVID-19 had a negative effect.

Responses note the following reasons that exacerbated learning outcomes for language students: (1) the loss of face-to-face interactions, (2) increased difficulty in forming connections between students or peers, and (3) disrupted study abroad plans and immersion programs.

Some respondents noted that COVID had resulted in *no language learning at all*.

In contrast, some respondents mentioned that the virtual format has helped increase accessibility and engagement, as well as increased use of online personal language learning applications (for example, Duolingo).

Discussion

The **communities of practice** framework for examining musicians and bi/multilinguals applied in this article draws on three key dimensions: (1) communities of practice are joined together by a mutual endeavor, (2) COFPs are mutually accountable for a shared repertoire of resources, and (3) COFPs are linked to one another and to institutions (McConnell-Ginet 2004: 71).

In analyzing the responses to the question, “What are the most enjoyable aspects of your musical life?”, our team found that many of the responses highlighted social aspects of musical life, aligning with the interview data found in the Best Practices Paper (Folks et al. 2021). Both show that the social aspects of music are significant to the development and maintenance of music-based communities of practice.

In-person linguistic and music-related gatherings involve interactions on multiple levels. For example, students attending music lessons not only interact with their teachers during the lesson, but also interact with peers before and after the lessons. Such interactions can come in the form of informal discussions in pairs or small groups, or in the form of formal large-group meetings. In the musical community of practice, collaborations between peers and mentors contribute to a person’s identity construction as a performer, instrumentalist, vocalist, and/or music educator.

In a university setting, students’ close interactions with their professors help them gain knowledge and competencies needed for success in a professional setting (McClellan, 2018:46). For bi/multilinguals social cues, such as voice, intonation, body language etc. are key aspects of face-to-face interactions (Opdennaker 2006), and thus can facilitate one’s language learning experience. Additionally, immersion through meaningful, embodied language-based social

interactions either with classmates or during study abroad enriches language learning (Freed, Segalowitz & Dewey, 2004).

The effect of COVID-19 has deeply affected all aspects of musical and bi/multilingual communities of practice. The shifting of communities of practice from in-person to online for language and music interactions diminishes multifaceted face-to-face interactions occurring on multiple levels (cf. Holmes and Meyerhoff, 1999:175). Additionally, the important link to an institution in the university setting enables students to make connections and advance in their careers grounded in particular communities of practice. In response to COVID-19, students, faculty, and staff at universities across the globe were required to leave campus. This separation significantly weakened the link to the institution and affected both music and language learning.

Within the musical community of practice, many respondents emphasized that the most enjoyable aspects of their musical life is making music with other people and playing with other musicians. The lack of in-person opportunities makes sharing musical experiences much more challenging. In an online setting, small time lags, poor internet connection, background noises, and the act of muting and unmuting all make it more difficult for a group to come together and engage in musicianship, where playing together on the same beat is key (Andrews, 2020: 4).

Our survey also showed that bi/multilinguals and musicians noted positive effects of the COVID-19 pandemic. For musicians, the most notable positive was finding more time to practice. A significant proportion of our respondents had exposure to one or multiple of their known languages from increased family interactions due to stay-at-home orders. Thirteen responses noted that exposure to their language(s) was from speaking at home; twenty-nine noted it was speaking with family members; and five noted that they spoke different languages with different family members.

For some bi/multilinguals, more interactions with family increased their exposure to a specific language. At home, many parents raising their children in bi/multilingual communities are concerned with their children maintaining their heritage language. This illustrates the shifting and linked nature of communities of practice, where language learning can shift weight from a university/school community to a family setting. Thus, the social component of bi/multilingual communities of practice is integral to its function and is particularly vulnerable to the transformed norms of social distancing experienced during the COVID-19 pandemic.

New and emerging COFPs in response to the COVID-19 pandemic: Nursing Homes and Retirement Communities

For musicians and bi/multilinguals in nursing homes, the COVID-19 pandemic has also deeply impacted their abilities to be a part of these COFPs. The pandemic has had a profound effect on older adults in retirement homes. As a response, many nursing homes went into complete lock down, barring all family and friends from entering the facilities and visiting residents. As a result

of these lockdown measures, residents face social isolation and loneliness, losing traditional means to connect with their social support networks. One means of social support is through music. Studies have indicated that musical activities including live music performances and individualized music were promising non-pharmaceutical facilitators in improving quality of life in individuals with dementia.

Conclusions

The COVID-19 pandemic is still with us in 2022, and continues to present unprecedented challenges to a wide range of communities of practice and institutions. The results from our survey generally point to losses and deficits due to the pandemic, but also include some modest positive outcomes. The evidence from our study and others point to the importance of communities of practice as a framework for explaining salient aspects of human interaction and the importance of social contact. In particular, the critical importance of face-to-face interactions has been dramatically revealed, and with it a new appreciation of being together in the same physical space. On the other hand, the inadequacy of virtual platforms in educational settings has also been accentuated and may inspire more enthusiastic learning in the classroom in the post-pandemic period.

References

- Andrews, E. (2020). Disembodied teaching and learning: Contributions from Speech Acts, Peircean Sign Theory and Multimodal Approaches to Embodied Cognition. *Glossos 15*, 1-12, IFLE U.S. Dept of Education, Vol. 7, June, 2021.
- Charney, S., Camarata, S. & Chern, A. (2021). Potential impact of the COVID-19 pandemic on communication and language skills in children. *Otolaryngology-Head and Neck Surgery*, 165(1), 1-2.
- Cohen, S., Ginsborg, J. (2021). The Experiences of Mid-career and Seasoned Orchestral Musicians in the UK During the First COVID-19 Lockdown. *Frontiers in Psychology*.
- Crosby, P., McKenzie, J. (2021). Survey evidence on the impact of COVID-19 on Australian musicians and implications for policy. *International Journal of Cultural Policy*.
- De', R., Pandey, N., & Pal, A. (2020). Impact of digital surge during Covid-19 pandemic: A viewpoint on research and practice. *International journal of information management*, 55.
- Denscombe, M. (2006). Web-Based questionnaires and the mode effect: An evaluation based on completion rates and data contents of near-identical questionnaires delivered in different modes. *Social Science Computer Review*, 24(2)
- Folks, H., Gamard, C., Morales, H., Naphade, D., Sinha, K., Stern, H. & Yannella, L. (2020). Best practices in collecting and encoding behavioral data for analysis in fMRI studies of multilingualism and musicianship. *Glossos 15*, 1-21.
- Freed, B., Segalowitz, N. & Dewey, D. (2004). Context of learning and second language fluency in French: Comparing regular classroom, study abroad, and intensive domestic immersion programs. *Studies in Second Language Acquisition* 26(2).
- Grunspan, D., Holt, E. & Keenan, S. (2020). Instructional Communities of Practice during COVID-19: Social Networks and their implications for Resilience. *Journal of Microbiology & Biology Education*, 22(1).
- Holmes, J. & Meyerhoff, M. (1999). The Community of Practice: Theories and methodology in language and gender research. *Language in Society* 28(2), 173-183.
- Klimova, B. (2021). An insight into online foreign language learning and teaching in the era of COVID-19 pandemic. *Procedia Computer Science*, 192, 1787-1794.

Loomis, D. K., & Paterson, S. (2018). A comparison of data collection methods: Mail versus online surveys. *Journal of Leisure Research*, 49.

McClellan, E. (2018). Communities of practice that contribute to undergraduate identity construction. *Act* 17(3), 30-56.

McConnell-Ginet, S. (2003). 'What's in a name?': Social labeling and gender practices. In J. Holmes & M. Meyerhoff, eds, *The Handbook of Language and Gender* (pp. 69-97). Oxford: Blackwell.

Meyerhoff, M. & Strycharz, A. (). Communities of practice. In J. Chambers & N. Schilling, eds, *The Handbook of Variation and Change* (2nd ed., pp. 428-447). John Wiley & Sons, Inc.: Blackwell.

Opdennaker, R. (2006). Advantages and disadvantages of four interview techniques in qualitative research. *Forum: Qualitative Social Research* 7(4), Art. 11.

Swarbrick, D., Seibt, B., Grinspun, N., and Vuoskoski, J. K. (2021). Corona Concerts: The Effect of Virtual Concert Characteristics on Social Connection and Kama Muta. *Frontiers in Psychology*. 12, 1-12.

Witte J. C., Amoroso L. M., & Howard P.E.N. (2000). Research methodology: Method and representation in Internet-Based survey tools. *Social Science Computer Review*, 18(2).

Appendix

Survey Respondents

TABLE 8. Characteristics of all survey respondents	
Characteristic	Number of Respondents (N = 141)
Gender Identification	
Woman	55
Man	22
Chose not to respond	64
Age (years)	
18	12
19	29
20	13
21 - 30	14
31 - 40	3
41 - 50	2
51 - 60	4
61 - 64	1
Chose not to respond	63
Community of Practice Membership	
Musician	18
Bi/Multilingual	90
Both	33

TABLE 9. Characteristics of musician respondents (respondents who indicated that they were musicians or both musicians and bi-multilinguals)		
Characteristic	Number of Musician Respondents (N = 51)	Mean Across All Musicians
Specific type of musician		

Conductor	1	
Instructor/Faculty	2	
Instrumentalist	29	
Student OR Currently receiving formal musical training	15	
Vocalist	4	
Number of years the musician has been playing		15.392 years
Number hours per day the musician currently plays their instrument(s)		1.507 hours
Some experience in these levels of music training		
High school	43	
Some college	28	
Associate's degree	0	
Bachelor's degree	6	
Master's degree	3	
PhD or professional degree	5	
Other	33	
Musical Instruments Played		
Piano	30	
Guitar	12	
Voice	11	
Violin	11	
Flute	5	
Cello	3	
Bass	3	
Clarinet	3	
Drums	2	
Percussion	2	

Accordion	2	
Mandolin	2	
Ukulele	1	
Saxophone	1	
Keyboard	1	
Viola	1	
French horn	1	
Trombone	1	
Organ	1	
Trumpet	1	
Dulcimer	1	

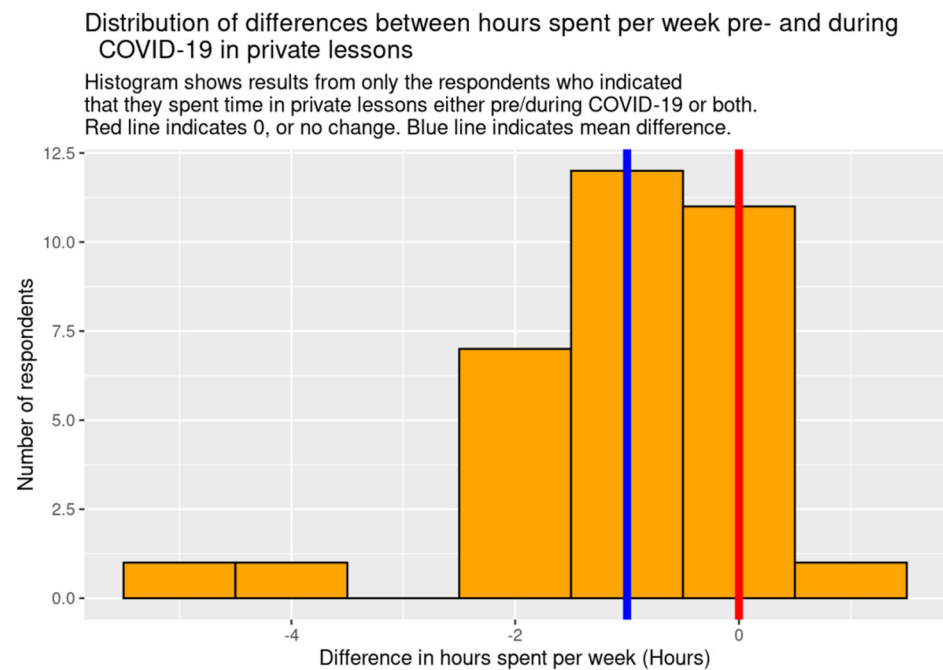


Figure A^

Distribution of differences between hours spent per week pre- and during COVID-19 doing music-related coursework

Histogram shows results from only the respondents who indicated that they spent time doing music-related coursework either pre/during COVID-19 or both. Red line indicates 0, or no change. Blue line indicates mean difference.

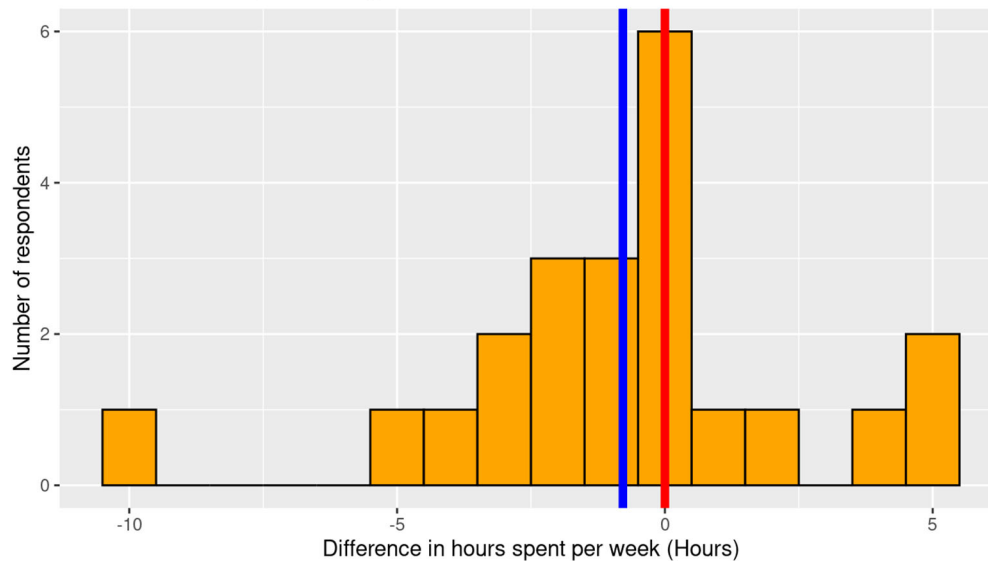


Figure B^

Distribution of differences between hours spent per week pre- and during COVID-19 in warmup

Histogram shows results from only the respondents who indicated that they spent time warming up either pre/during COVID-19 or both. Red line indicates 0, or no change. Blue line indicates mean difference.

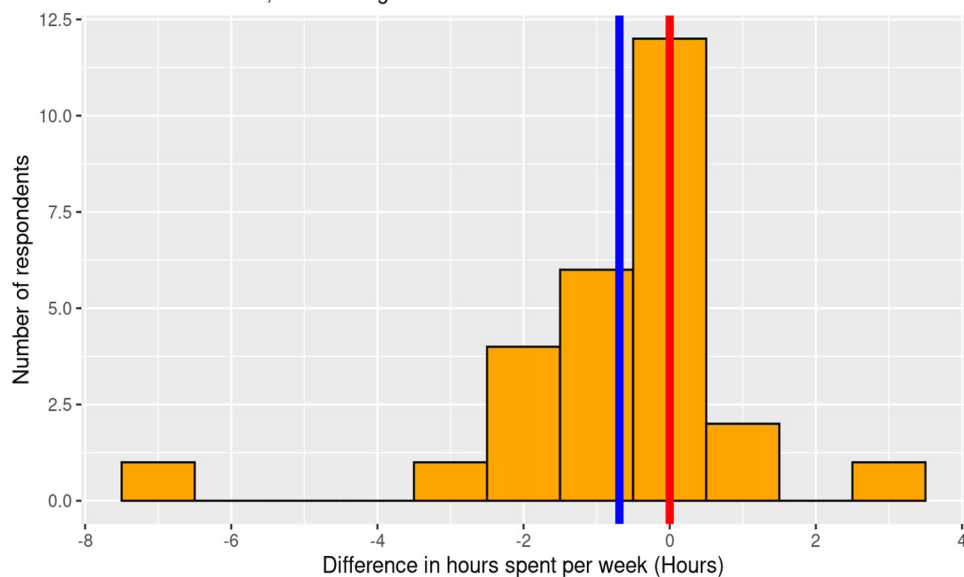


Figure C^

Distribution of differences between hours spent per week pre- and during COVID-19 in formal music training

Histogram shows results from only the respondents who indicated that they spent time in formal music training either pre/during COVID-19 or both. Red line indicates 0, or no change. Blue line indicates mean difference.

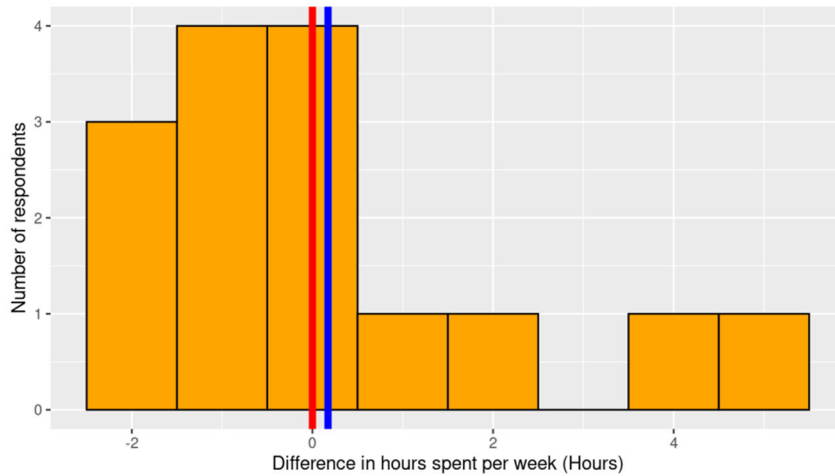


Figure D^

Distribution of differences between hours spent per week pre- and during COVID-19 performing

Histogram shows results from only the respondents who indicated that they spent time performing either pre/during COVID-19 or both. Red line indicates 0, or no change. Blue line indicates mean difference.

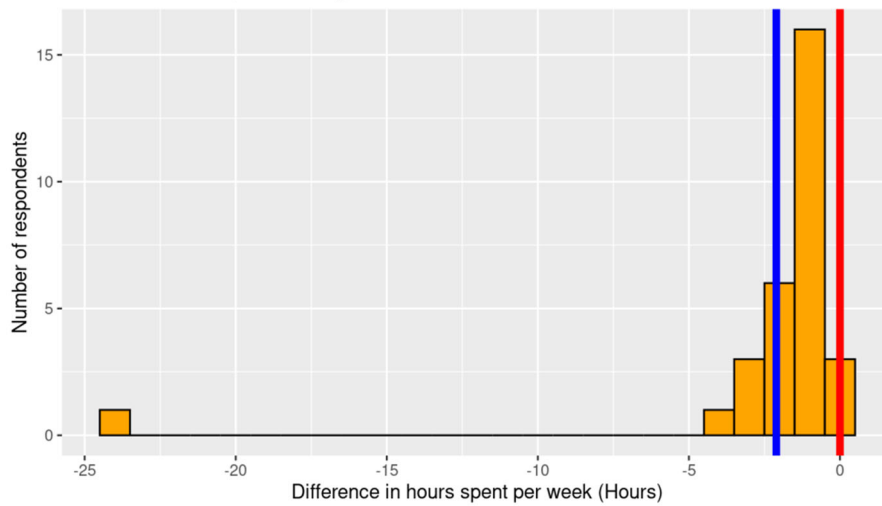


Figure E^

Distribution of differences between hours spent per week pre- and during COVID-19 rehearsing

Histogram shows results from only the respondents who indicated that they spent time rehearsing either pre/during COVID-19 or both. Red line indicates 0, or no change. Blue line indicates mean difference.

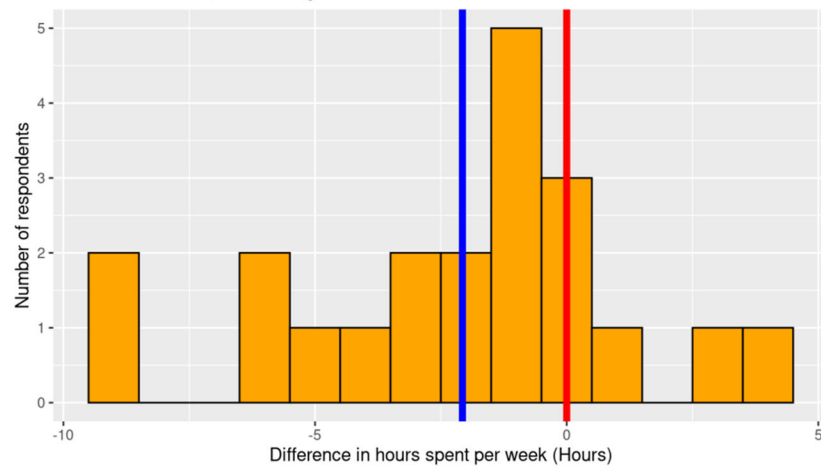


Figure F^