

# Measuring the Effect of the Pandemic on Music Practicing Time and Motivation

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## Abstract

The COVID-19 pandemic had a large impact on the world as a whole. The pandemic had a particular impact on musicians, replacing live performances and in-person lessons with recorded performances and remote lessons during lockdown. Disruptions and uncertainty caused by the pandemic have created great change in the lives and schedules of music students, which has been observed by several recent studies. Such studies focus on adult classical musicians, but this study aims to observe school-age music students. In the current study, American music students filled out a survey measuring demographic data and descriptive data about practice time, feelings of threat, and feelings of uncertainty. I hypothesized that practice time would be affected by the pandemic, as well as feelings of motivation, threat, and uncertainty. I found that none of the above held a strong correlation with practice time. However, I also found a significant relationship ( $p < 0.05$ ) between years played and motivation to practice. Changes in lesson format positively affected student motivation and practice times, and overall motivation and effectiveness of lessons were positively affected by years of musical experience.

*Keywords: Music students, Lesson format, Pandemic, Practicing time, Effectiveness, External motivation, Internal motivation.*

## 1. Introduction

The 2019 coronavirus disease (COVID-19) pandemic caused significant stress and uncertainty among everyone. Students were especially affected by the pandemic, as lockdown procedures caused school closures and restricted in-person gatherings. Students had to adapt to the new teaching structure of asynchronous lessons and material, while also developing skills to maintain and manage new schedules. Music students were even more so affected by such severe disruptions, with live performances and in-person lessons being important parts of their curriculum.

This research project responds to the gap in the literature regarding classical music students over the pandemic and seeks to further examine the impact of the pandemic on musicians. My research question asks whether the COVID-19 pandemic increased or decreased the length of music students' practice times. I hypothesized that the COVID-19 pandemic decreased the length of music students' practice times for students who had increased anxiety or decreased motivation over the pandemic. My second research question was whether changes in motivation affected the amount of practice time. I hypothesized that changes in motivation will decrease the amount of practice time. Lastly, my third research question was whether feelings of threat and uncertainty affect the amount of practice time. I hypothesized that an increase in feelings of threat and uncertainty will result in a decrease in practice time. Predicted findings would be that practice time and motivation would go down during the pandemic. Results could help us determine whether the pandemic had a positive, negative, or neutral effect on the musician population. By assessing the pandemic's effect on the musician population, researchers can understand what factors impacted the musicians the most and maximize musical productivity.

## 2. Literature Review

Recent literature suggests that students have been heavily impacted by the pandemic. Garcia and Weiss (2020) found that the pandemic affected teaching and learning due to lacking the needed requirements for effectiveness. With the general student population in such a state, it is prudent to analyze how other demographics were affected by the pandemic. By observing how certain demographics were affected by the pandemic, researchers can narrow down which aspects of the pandemic were most impactful. Artists, for instance, were negatively impacted by the pandemic in particular ways. In 2020, many artists were economically displaced due to the pandemic and experienced a large decline in revenue (Guibert and Hyde, 2021).

Fram, N. R., Goudarzi, V., et al. (2021) utilized an internet survey on musical practice and collaboration and received responses from US musicians. They found that musicians are resilient to extrinsic shocks, as musical practice and correlation numbers did not see a large differential over the pandemic.

Studies that examined music students also highlighted the pervasive impact of COVID-19. Rossen, Baumann, and Altenmuller (2021) surveyed 75 German university students in 2019 and 2020, and found that 76% of students indicated a change in practicing hours during the pandemic: 31% of students reported an increase in daily practicing hours, while 45% reported a decrease. This may show that there are other factors other than the pandemic that influences practice habits, and also that not all musicians were affected in the same way by the pandemic.

Other researchers, such as López-Íñiguez, McPherson, et al. (2022), measured the effects of internal and external motivation on professional classical musicians before, during, and after the pandemic. Internal motivation was classified as motivation that comes from internal thoughts and feelings (e.g. “I want to practice because it is important to me”). In comparison, external motivation is motivation that comes from outside factors (e.g. “I practice because my parents want me to”) They found that externally motivated musicians were more affected by the pandemic, while self-motivated students were less affected. They also measured and found an inverse correlation between threat and self-motivation, with increased feelings of threat resulting in a decrease in self-motivation. Feelings of threat referred to the amount that the participants felt they were threatened by the pandemic and COVID-19.

Nusseck and Spahn (2021) measured the self-motivation of musicians as well, measuring German university music students. They collected data on the practice environment, physical activity (exercising and sports), and practice time of the students. They found that while the mean practice time between before and during the pandemic stayed the same, there were notable differences in the practice times of music performance and music education majors: music performance majors practiced less over the pandemic, while music education majors practiced more than before the pandemic.

Howard, Green, et al. (2021), who studied young musicians from Australia, England, and Portugal, found similar results, noting an increase in practice time and music production over the pandemic. They concluded this was due to self-motivated young musicians being able to turn inward and find more time to practice.

Overall, recent research indicates that whether positive or negative, the impacts of the COVID-19 pandemic were significant for musicians. This study seeks to explore this assumption in an unexamined population: younger music students.

## 3. Materials and Methods

### 3.1 Participants

The study actively recruited participants from the San Francisco Conservatory of Music and Lynbrook High School, as well as other students from various states, though to a much lesser degree. The participants were largely from these two areas as they were most receptive to the author’s recruitment. There were 85 participants in total, of which 35 were male, 47 were female, 1 was non-binary, and 2 preferred not to state their gender. Out of the participants, 3 played percussion, 31 played keyboard instruments, 25 played string instruments, and 26 played wind instruments. Participants were divided into three age groups: 1-15 years old ( $N = 35$ ), 16-21 years old ( $N = 42$ ), and 22-66 years old ( $N = 8$ ).

### 3.2 Design and Materials

This study used an ex-post facto design. Due to the pandemic's effects being lessened by the time of the study, an ex-post facto design was ideal for observing potential relationships and correlations during the time of the pandemic. A survey was designed to investigate the potential relationships and correlations between various factors (e.g. remote or in-person lessons) and measure overall practice time for classical music students and professors in the United States during the COVID-19 pandemic. The pandemic was divided into three periods: before January 30, 2020, when WHO declared COVID-19 a pandemic, January 30, 2020 to June 15, 2021, when lockdown restrictions were lifted in California, and June 15, 2021 to the present. The data was collected after the three periods of the pandemic to ensure all the periods were taken into account for comparison. The survey measured feelings of threat, uncertainty, and motivation of musicians to practice over the three periods of the pandemic. Additionally, surveys were chosen as the primary source of data collection due to convenience of making a survey and the ease of gathering responses to a relatively short survey compared to the time required for a full-fledged experiment. In the survey, feelings of threat and uncertainty were measured by how much the participants felt they were threatened by the pandemic situation, rating agreeability on statements such as "I felt threatened by a possible viral infection and disease of my loved ones." Motivation was measured using similarly styled survey questions to determine the participants' motivation for practice and whether they had external or internal motivation. The threat and motivation scores were calculated by averaging all appropriate item responses.

The survey was formatted with seven-point Likert scales for each question. The seven-point Likert scale system would allow for a numerical measure of the measuring of abstract concepts, which makes statistical testing more feasible. The questions measured demographics, self and external motivation for practice, and descriptive data about changes in practice time. Levels of threat and uncertainty were measured using a COVID-19 adaptation by Vermote et al. (2021) of the original *Feelings of Uncertainty and Threat Scale* from Chen et al. (2015). Motivation was measured using the *Multidimensional Motivation at Work Scale* by Gagne et al. (2015). The two scales are different since they were sourced from existing research papers. As the scales were created for the express purpose of measuring each variable, using the different scales should provide clearer results.

### 3.3 Data Analysis

In the data analysis process, frequency charts were first used to determine the overall spread of the data, ensuring that there were not any egregious outliers. The data was then tested through t-tests, assessed through correlational tests, and inserted into regression models. Significance was determined by examining the p-values and R-squared values found in the data and assessing if they were under 0.05.

## 4. Results

### 4.1 Changes in Practice Time Before, During, and After the Pandemic

To answer if the pandemic had an effect on practice times, the data for each time period was first averaged and compared for any trends. I found that there were not any strong trends regarding practice time before, during, and after the pandemic, as all three were relatively similar (Figure 1).

The following percentages, r-values, and p-values were all found through the input of data in Microsoft Excel. I analyzed the practice times of different instrument types to ensure that this trend applied to all instrument types. As different instrument types likely had different experiences during the pandemic (ie. wind instruments being unable to play in public due to mask restrictions), thus, it is important to observe the results by instrument type to ensure

my data is applicable to musicians as a whole. There was a fairly even distribution of instruments played by the participants of the study (3.5% percussion, 36.5% keyboard, 29.4% strings, and 30.6% winds). Because the instrument type was approximately equally distributed, we were able to attain data that was more applicable to musicians of all instrument types. Using the demographic data attained, we were able to sort practice times by instrument (Figure 2). Trends in the data showed that winds tended to practice the least, while pianists practiced the most. There was not a strong trend found between practice times before, during, and after the pandemic, but it can be noted that percussionists experienced gradual increase in practice hours from pre- to post- COVID, while the inverse was the case for wind instrumentalists, who experienced a gradual decrease.

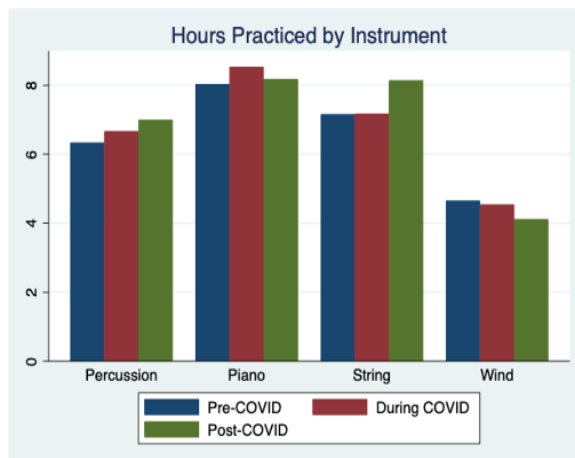


Figure 2. Mean Number of Hours Practiced Before, During, and After the Pandemic Across Different Instrument Groups

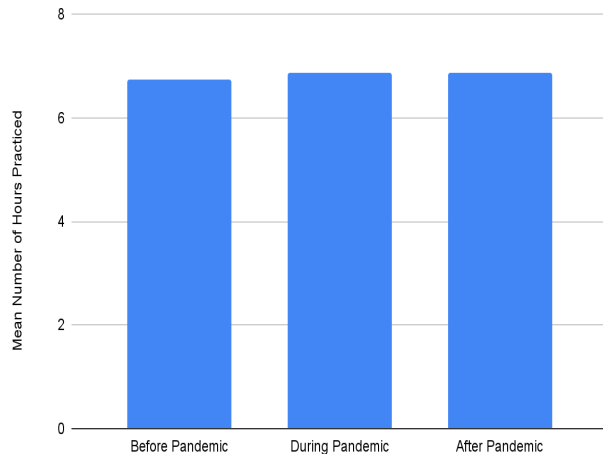


Figure 1. Mean Number of Hours Practiced Before, During, and After the Pandemic

String instrumentalists stayed the same between pre- and during COVID, but times by instrument experienced an increase after COVID, while keyboardists had a dramatic increase during COVID, but afterward receded to similar numbers as before COVID.

#### 4.2 Effects of Motivation on Practice Time During the Pandemic

I found that there were mixed results regarding motivation in my study. Although 47.1% of students saw a decrease in motivation, a slight majority reported no change or an increase in motivation, with 31.8% reporting no decrease in motivation and 21.2% reporting a possible decrease in motivation. Additionally, motivation was weakly positively correlated with mean hours of practice during the pandemic, but the correlation was not significant ( $r = 0.193$ ,  $p = 0.077$ ).

#### 4.3 Effects of Feelings of Threat and Uncertainty During the Pandemic

On average, participants had a mean threat score of 4.3, indicating that there was not a strong sense of threat felt during the pandemic. This is supported by the weak correlation between the mean hours of practice during the pandemic, and the correlation was not significant as well ( $r = 0.125$ ,  $p = 0.256$ ).

#### 4.4 Further Investigation

We conducted additional analysis based on the results we received in the survey. From the 85 participants, 47 were female, 35 were male, and 3 were otherwise identified. Descriptive analysis and subsequent t-tests found no significant difference in the number of instruments based on gender. Survey questions were answered by those who took lessons under the asked formats. Descriptive analysis indicated that in-person lessons were widely regarded as more effective than remote lessons. On a scale of 1 to 5, in-person lessons were given a mean score of 4.695 compared to remote lessons' mean score of 2.725 (Figure 3).

A t-test allowed us to find a negative correlation between years and motivation, in which participants that have more years of musical experience experienced lower motivation during the pandemic ( $r = -0.218, p=0.045$ ). Lesson format was classified in two categories: remote and in-person. Remote lessons are virtual lessons held through services such as Zoom or Google Meets, while in-person lessons are lessons held in a physical setting where both the instructor and the student are in close proximity. A positive correlation was found between lesson format during COVID and feelings of threat and uncertainty ( $r=0.2206, p=0.0424$ ).

Similarly, p-values of less than 0.05 made up every test regarding hours of practice and effectiveness of lesson formats for both remote and in-person during all time frames, allowing us to determine that hours of practice and effectiveness of lesson formats are correlated. This correlational model also supports this data, as the p-values found are less than 0.05, meaning more hours of practice result in a higher rating of lesson effectiveness.

Age and gender, on the other hand, had a lesser effect on the independent variable of practice time ( $p=0.069$ ). Thus, we fail to reject that age and gender do not have an effect on practice time. When examining regression models, measures of threat and uncertainty also did not have a strong effect on results ( $p=0.473, 0.582$ ).

## 5. Discussion

In this study, 85 classical musicians were surveyed about their practice times, lesson format, and feelings of threat and uncertainty amid a global pandemic. While no significant trends were found in terms of practice hours before, during, and after COVID, it is clear that musicians tend to favor in-person lessons over remote ones. The lack of discernible pattern in practice hours was also shown by Nusseck and Spahn (2021) and López-Íñiguez, McPherson, and Alzugaray (2022). Both found that when looking at the average of all the practice times submitted, there was not a large increase or decrease found in overall practice time over the pandemic from university music students. Thus, my findings regarding practice time also contradict the findings of Howard, Green, et al. (2021) who posit that practice times during the pandemic increased due to musicians being able to turn inward and find self-motivation to practice. This discrepancy could occur because of the difference in participant demographics, as this paper researched musicians of all ages while Howard, Green, et al. (2021) conducted research exclusively on professional musicians who would have more motivation because their profession is in music.

Feelings of threat were found to not be strongly correlated to any of the variables. For motivation, however, a negative relationship was found between years of playing and motivation, as musicians with more years of experience reported less motivation overall. This was one factor no other research paper has taken into account thus far, as surveys did not ask for the participants' previous music experience. Another factor previously unaddressed was the perceived effectiveness of lesson formats. Doing so, we found that in-person lessons were significantly rated as more effective than remote lessons across instrument types and age groups – when rated on a scale of one to five, the mean of in-person lessons was 4.695 while the mean of remote lessons was 2.725.

### 5.1 Limitations

Several limitations to this project must be noted. First, this study utilized a voluntary response sample, which creates potential for nonresponse bias or risk of an unrepresentative sample. With only willing musicians answering the survey, perhaps the unrepresented musicians would have provided different answers. The responses were also self-

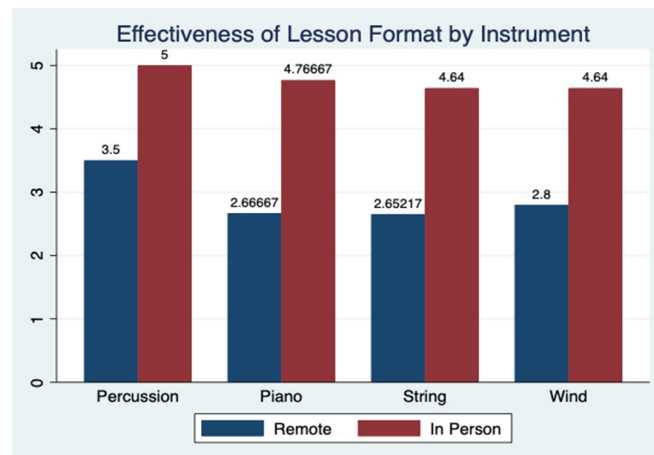


Figure 3. Effectiveness of Lesson Format by Instrument Group

reported, so many factors such as effectiveness of lesson format may not be accurate due to it being based on human opinion. Additionally, although data was not collected from a single school, location, and instrumentalist, the overall sample size was fairly small, which engenders a lack of generalizability, as most responses are concentrated within a certain demographic, whether it be age or location. This limits the applicability of the findings to a larger population. The population was also largely split between two different demographics – Lynbrook High School and the San Francisco Conservatory of Music. Due to differences in dedication towards music, as SFCM students are likely more devoted and spend more time practicing, my data may be less applicable to a wider population.

## 5.2 Future research

Future research should seek to engage a larger sample size and attain data on these variables from a wider, more varied population. The findings indicate there is value in probing more specific questions regarding motivation to practice and practice hours, since my survey data did not demonstrate a correlation between those two factors; however, more specific questions designed to determine if the two are related might yield a more definitive answer. Future studies might be able to look more deeply into the variables of musical experience and lesson format, as my paper was the only one to report data related to effectiveness of lesson format and the impact of musical experience on results. With more questions or data related to these variables, greater understanding of the importance of them can be determined. Additional relevant variables that could be explored include sources of external and internal motivation to practice, and demographic variables such as geographic location, level of education, and annual family income.

## 6. Conclusion

This research project was conceived to address the gap in extant literature on the impact of the COVID-19 pandemic on musicians, which focused on professional or college musicians. In contrast, the sample size of this project primarily centers around students from middle to high school age, in order to target a demographic otherwise less explored. It explores the variables of practice time, motivation, and feelings of threat and uncertainty. The three initial research questions were answered throughout the investigation. The pandemic did not have a significant correlation on practice time. Moreover, feelings of motivation also did not have a significant correlation on practice time. Lastly, the participants' feelings of threat and uncertainty also did not have a significant correlation with practice time. Aside from the initial research questions, more of my survey data was analyzed to determine other correlations between variables. The findings suggest that in-person lessons are the most effective across all instrument types pre- and post-pandemic. Further, previous musical experience was positively correlated with level of motivation to practice throughout the pandemic. By providing data from an untested demographic, these results can be added to the existing body of research towards better conceptualizing the differences and similarities between child or teen musicians to adult musicians and the impact of the pandemic.

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