

# Performing Arts High School Attendance Impact on the Average Amount of Academic Anxiety Experienced

Yunah Chun

Orange County School of the Arts, USA

## ABSTRACT

In this field of psychology and art, there are countless research papers done on the positive impact that music and all the other art forms have on the anxiety of schools of all ages. However, this may not always be the case as there have been studies comparing the mental strains of art major college students and non-art major college students, showing considerably more strain and stress for art major students. Concerningly, there has been limited research on the academic anxiety of performing arts students when compared to conventional students. Therefore, this study sampled 60 high school students from different high schools, either a performing arts high school or a conventional high school, and aimed to find how the level of academic anxiety changed depending on whether attending a performing arts high school affected them while taking into account the potentially confounding variables of home environments, personal goals, and academic intensity. Data for this survey was collected in a three-part survey that utilized the Academic Anxiety Scale and through the usage of a Mann-Whitney U Test. It was found that there was a statistically significant correlation between the average amount of academic anxiety that a high school student faced and the type of school that they attended. It was also found through a two-tailed t-test that many of the confounding variables listed above did not vary significantly between the two types of high schools. Limitations and implications are also discussed further.

## Introduction

One of the most prevalent issues affecting American adolescents is the rising rates of anxiety. For this study, the term "anxiety" will be defined based on the American Psychological Association's criteria as "an emotional state characterized by tension, worrisome thoughts, and physical manifestations such as heightened blood pressure." Unfortunately, according to the National Institute of Mental Health, 1 in 3 adolescents experiences some form of anxiety disorder. While the causes for this alarming statistic have yet to be confirmed, these causes might include environmental factors and academic pressures. More specifically, in a study by the University of Washington that questioned the reasons for their anxiety and stress, a shocking 83% identified school as their primary stressor. Now, more than ever, research needs to be done surrounding the topic of anxiety and academics, as due to the COVID-19 pandemic, the youth of America is experiencing what is known as a "mental health crisis" (Abrams, 2023).

While many high school students deal with anxiety daily, some of the most prevalent symptoms have been as follows: "trouble relaxing; being so restless that it is hard to sit still; becoming easily annoyed or irritable; feeling afraid as if something awful might happen" (Yin et al., 2022). This condition does not stop at the psychological aspect; it has also been connected with different physiological conditions, such as digestive (Lee, 2015) or cardiovascular diseases (Celano et al., 2016). It is more crucial now than ever that more research is done in this field, as in the post-COVID 19 times, research has found that 21% of males and 47% of females have stated that they experience moderate or severe anxiety symptoms (Yin et al., 2022). While the causes for this rise in anxiety have yet to be confirmed, these

causes might include, but are not limited to, the following: genetics, environmental factors, peer pressure, family dynamics, and academic pressures (Bhatia and Goyal, 2018).

Currently, there is a gap in the body of knowledge in terms of the type of school attended, whether it be performing arts or conventional, and how that affects the academic anxiety of high school students in Orange County. Additionally, there is a gap in terms of analyzing the mediating variables of home environment, personal goals, and academic intensity between the two populations of students. Thus, my research question “How does having an arts focus in high school impact the average amount of academic anxiety that Orange County high school students have when compared to their conventionally schooled counterparts while considering the mediating variables of home environment, personality, and academic intensity?” will try to mitigate this gap by utilizing a mixed methods approach, combining both qualitative and quantitative data, to find the correlation between the type of school attended and the amount of academic anxiety experienced. Through the results of this study, future policy makers for school will be able to incorporate mitigating academic anxiety as one of their main goals, which may lead to programs designed to decrease the amount of academic anxiety experienced.

## Literature Review

### Art Focus in High School

Throughout the various research that has been done about art, one of the most prevalent topics has to do with the benefit that art has on people's overall well-being. Specifically, arts engagement, defined as creative writing, visual arts, or musical engagement, has been correlated with improved physiological and psychological effects for people of all ages. In fact, due to these effects, the arts have been a key factor in different types of therapy, such as music or dance therapy (Stuckey, 2010). Other research has proposed that specific art forms have had beneficial results on different academic subjects. One example mentioned was musical education and its relationship to improving mathematical skills, processing, and retaining information, as well as other vital factors (Schneider, 2021). Therefore, having an arts-focused education could benefit high school students as the arts have been correlated with a calming effect on their mental well-being and a beneficial effect on the academic subjects themselves.

Due to the vast amount of research that has been done in this field, other studies have been able to conclude that this has led to the rise of arts-based programs in the United States, which have had the effect of decreasing the amount of misbehavior, improving writing achievements, increasing compassion, and improving engagement in school, dreams, and empathy (Bowen and Kisida, 2019). Additionally, studies that have incorporated the use of an arts-based intervention for high school students have suggested that this has been correlated with a decrease in overall depressive and anxiety symptoms (Osborn et al., 2023).

### Anxiety Over Arts and Academics

High school students are usually stressed over academics, home life, and peer pressure. Studies show a correlation between pressure from the teacher's class and a lack of respect for that teacher (Byrne et al., 2007). This could be due to the stress of balancing demanding schoolwork and maintaining good relations with teachers and friends (Byrne et al., 2007). Additionally, some stressors that come under the umbrella term of 'academic anxiety causes' include the following: challenging subjects, excessively high expectations, keeping up with schoolwork, waking up early to get to school on time, transportation, and effective communication with teachers and peers (Moya et al., 2022).

Consequently, while having an arts education in high school years has been generally correlated with a decrease in anxiety, studies have also proven that, in some situations, it can lead to an increase in anxiety (Vaag, 2021). Research has shown that high expectations of peers and having a perfectionist mentality while practicing performing arts tend to have the opposite effect and increase anxiety (Wigert et al., 2012). This results from the constant self and

outside criticism surrounding the arts (Wigert et al., 2012). In addition, for performing artists especially, performance anxiety can contribute to an increase in anxiety rather than a decrease. One example is playing a musical instrument. This activity can help relieve the pressures of life, which can lead to more cognitive function, mental health, and connections to other peers, as well as typically translating into better results in other school-related subjects (Miendlarzewska, 2014). However, turning it from a fun hobby into a performing art may have the potential to increase music performance anxiety, as anxiety is much higher in front of a live audience rather than in a private performance (Guyon, 2020).

## Conventional High School Students Versus Performing Arts High School Students

While conventional high school students generally deal with academic stressors, performing arts students have to deal with both conventional academic stressors as well as specialized performing arts anxiety. Those who only study fine arts in college have been proven to have higher amounts of mental strain and stress and spend more time on their coursework than their non-art major counterparts (Lee, 2023). However, there needs to be more research on whether that remains true for high school students who take fine arts and academic classes versus those who only take academic classes.

Besides studying performing arts in high school, many different variables could potentially impact the level of academic anxiety that students experience during high school. One factor was the home environment. Dr. Ajax Kumar's study found that a healthy home environment with effective communication between the parent and the child decreased the level of academic anxiety that was experienced. A second factor was the individual goals (Kumar, 2013). A study by Andreea Stana found that the more goals centered around academic performance, the more academic anxiety the student faced (Stana & Oprea, 2014). A third factor is the amount of academically intense classes a student takes during their school day. Ruiwen Xiong's study showed that students who took two AP classes had the best median mental health, which is also consistent with self-perceived academic anxiety. However, stress and anxiety levels increased when students took more than 3 AP classes (Xiong, 2024). Therefore, while there has been research done about the moderating effects of self-efficacy and creativity when it comes to the impact that fine arts education has on the psychological health of students (Jin & Ye 2022), there has been limited research done on the the impact that a performing arts-focused high school education has on the academic anxiety of high school students while considering the effects of home environment, personal goals, and academic intensity.

Therefore, this brings me to my research question: How does having an arts focus in high school impact the average amount of academic anxiety that Orange County high school students have when compared to their conventionally schooled counterparts while considering the mediating variables of home environment, personality, and academic intensity?

The rationale behind choosing Orange County as a place for research to be done is the fact that there is a diverse population of people living in Orange County; in fact, 58 percent of these residents are people of color; it is a place that can see the impact of people with different demographics (USC, 2016).

This research is vital to the current issue of the youth mental health crisis and the growing conversation about the arts being incorporated in schools across Orange County. With Orange County being home to 3.151 million people as of 2022 according to the Orange County Census, it is crucial that this research is done so that the people within Orange County can see the impact of the arts on academic anxiety while considering the three mediating variables of home environment, personality, and academic intensity.

To answer this question, I will use a mixed methods approach by combining elements of a quantitative survey that utilizes the Academic Anxiety Scale and a correlational data analysis. This study will examine the data from samples from both a conventional high school and a performing arts school in Orange County. This data would then be instrumental in drawing tentative conclusions about the connection between the amount of anxiety that students face in terms of their academics and whether they attend an art-focused high school or a traditional high school. Through the use of this study, the future generation and their parents can make educated decisions about their child's

direction for high school, and policymakers for schools can take the conclusions made in this study and discover ways to decrease the problem of academic anxiety that many students face.

## Methods

### Participants and Ethics

This study will be conducted through a survey that takes elements from a cross-sectional and correlational study in order to properly collect and analyze the data necessary for the study. The two populations that will be studied in this study will be the Orange County high school students who attend either a performing arts high school or a conventional high school. The data collection section of this study will take approximately a month, from the start of February 2024 to the end of that month. It also must be acknowledged that this study will be conducted through convenience sampling as this cannot be true random sampling and will be limited to the people that my associates and I know ourselves. I also received IRB approval as my study falls under the category 7 section of the expedited studies list as I am planning to use survey procedures to research the behavioristics of a group, more specifically, how the type of school high students attend (performing arts or conventional) affects the overall academic anxiety rates of high school students in Orange county.

### Step-By-Step Methodology and Justification

The first step in my methods was to get the participants for my survey. I first sent out a message through email and social media channels, such as Instagram, to ask for high school students to participate in my survey. Then, when I received confirmation of their intent to participate in the survey, I sent them an informed consent form detailing the goals and procedure of my study (see Appendix A). Once I received the informed consent form, I sent out the survey that I had made using Google Forms. The survey had three essential components. The first page had basic information for the participants to fill out, such as the type of school they attended and their grade level, as this was important data to differentiate the two data sets of performing arts students and conventional students. The second page had the Academic Anxiety Scale, a reliable and valid measurement of academic anxiety that was developed and validated in 2019, with the ideal participants being noted as students (Cassady, 2019) (see Appendix B). Other quantitative anxiety scales, such as the Anxiety Symptoms Questionnaire (ASQ), are far too general and aren't specific to the academic anxiety that my research question is aiming for. Therefore, I made the decision to pick the Academic Anxiety Scale instead. The third page had the three quantitative Likert-scale questions ranging from 1-10, noting the extent to which each participant felt that the mediating variables of home environment, personal goals, and academic intensity impacted their academic anxiety and a place to explain their numerical decisions. This page was important as it helped to quantify and qualify the mediating variables so that the Academic Anxiety Scale could be used while considering these variables. This data was essential for answering the research question of "How does having an arts focus in high school impact the average amount of academic anxiety that Orange County high school students have when compared to their conventionally schooled counterparts while considering the mediating variables of home environment, personality, and academic intensity?" After the completion of my survey. I used a pilot sample to further refine my questions, making them as objective as possible. The final questions can be seen in Appendix C. Once the data collection period was over, I gathered all the quantitative and qualitative data in Google Sheets and conducted the Mann-Whitney U Test and a two-tailed t-test in order to find if the data was statistically significant.

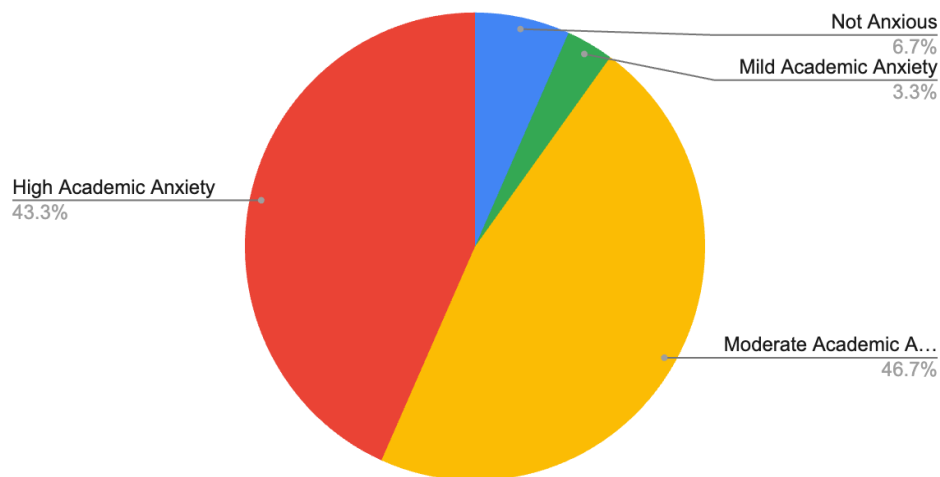
## Findings and Analysis

### Quantitative Findings

During this study, there was unavoidable self-reporting bias which resulted in a variety of answers in the survey. The survey attempted to find whether or not having an arts education decreases the amount of anxiety that high schoolers face due to the calming impact of the arts, or increases their level of anxiety because of the additional work that is given to them on top of the conventional academic schooling that is already stressful. To do this the survey utilized 11 questions with a 1-4 scale with 1 meaning to “Not at all typical of me” and 4 meaning to “Very typical of me”, in order to determine whether or not a student had no, mild, moderate, or high academic anxiety. The specific anxiety rates for the performing arts high school students can be seen in Figure 1 and the specific anxiety rates for the conventional high school students can be seen in Figure 2.

**Figure 1**

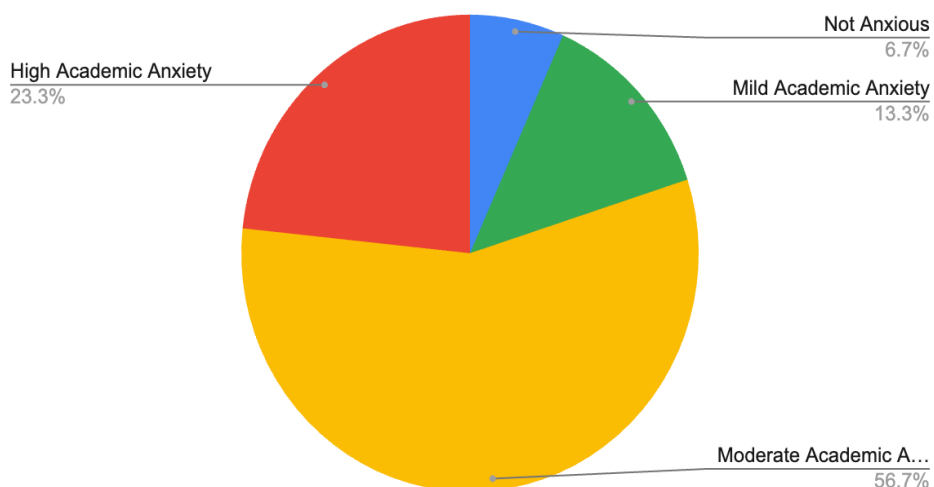
Performing Arts Students Anxiety Rates



**Figure 1.** Performing arts students anxiety rates.

**Figure 2**

Conventional Student Anxiety Rates

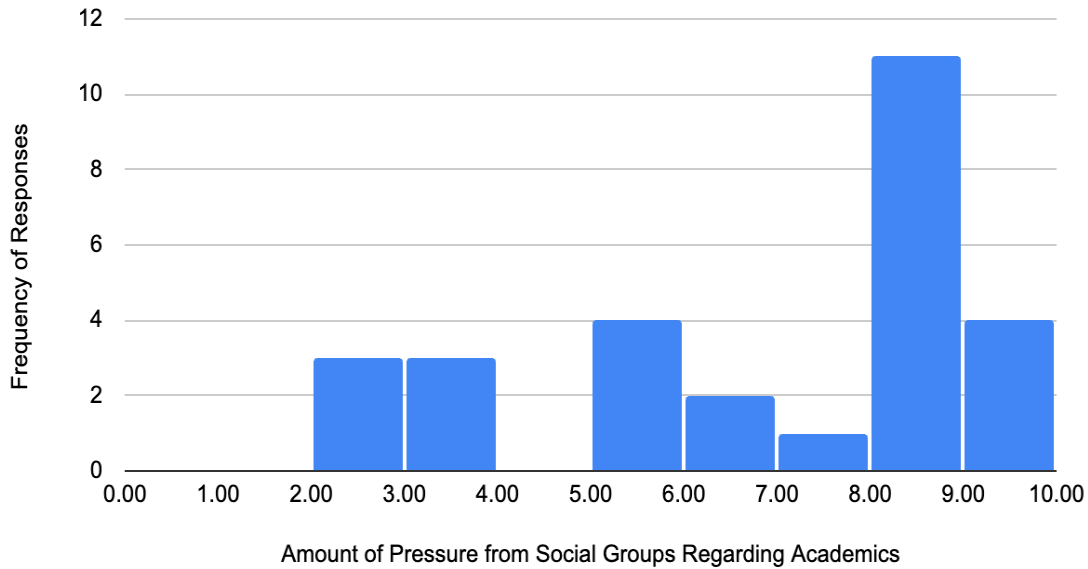


**Figure 2.** Conventional student anxiety rates.

In addition to the Academic Anxiety Scale, the survey also asked questions regarding three different mediating variables. In all three of the mediating variables, the participant was asked to label their perceived pressures to do well in the academics portion of their school and optionally choose to add qualitative states as to why. First, it asked about the home environment with regard to academics that the participant was experiencing, such as pressure from families to do well in their academic classes. The histogram representing the rates for the performing arts students are shown in Figure 3 while the rates for the conventional students are shown in Figure 4.

**Figure 3**

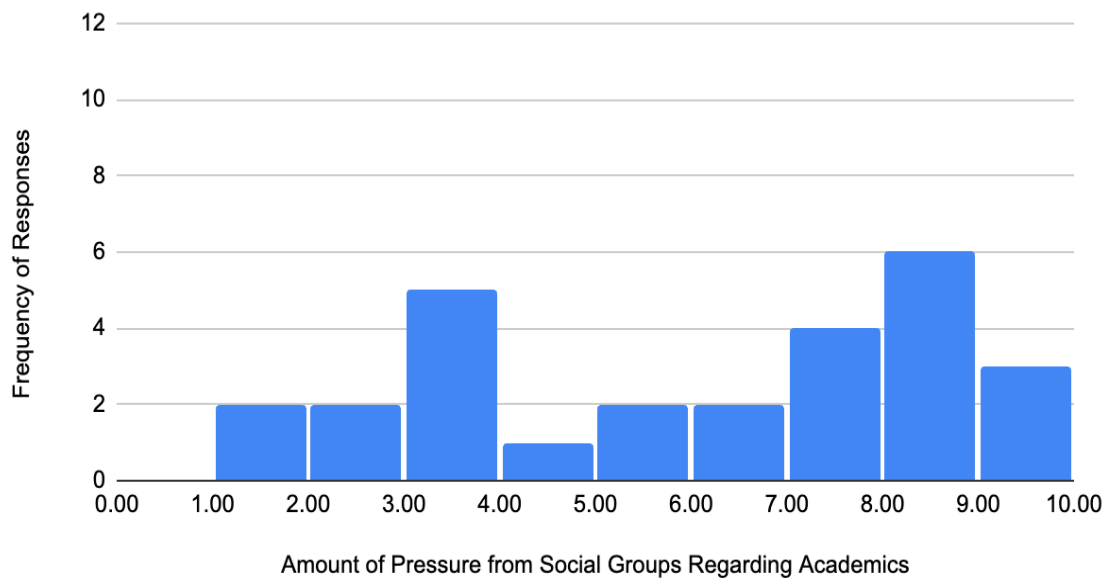
Performing Arts Students



**Figure 3.** Performing arts students.

**Figure 4**

Conventional High School Students

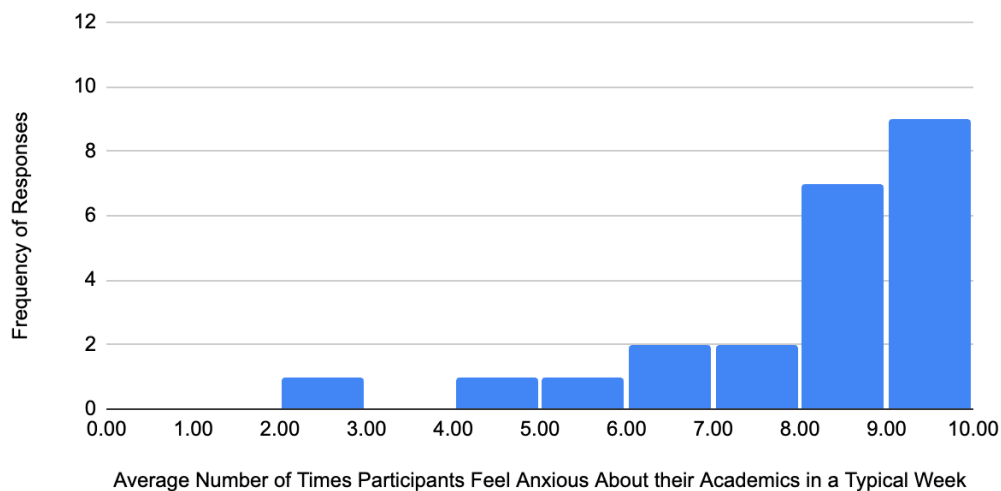


**Figure 4.** Conventional high school students

Second, it asked about the academic pressures that the participants place on themselves to succeed, as well as their personal goals when it comes to their academic pursuits. The histogram representing the rates for the performing arts students are shown in Figure 5 while the rates for the conventional students are shown in Figure 6.

**Figure 5**

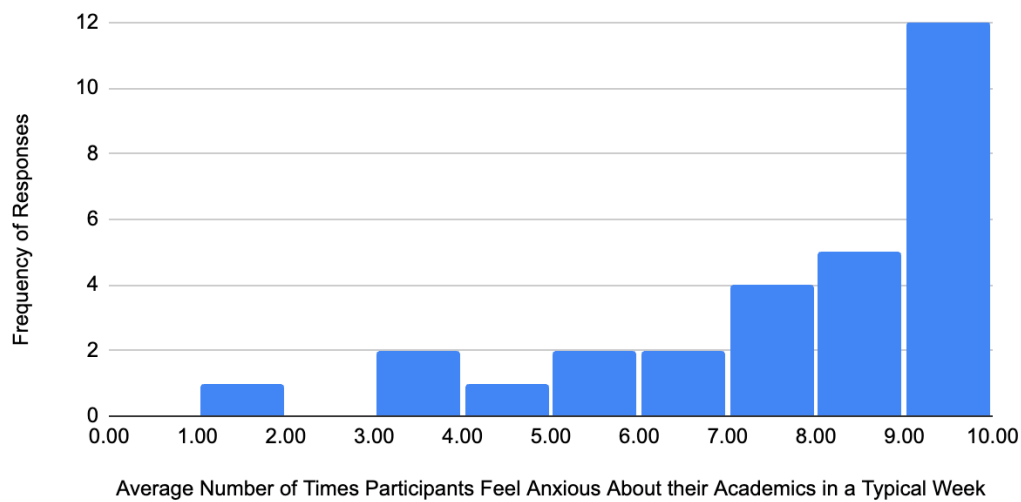
Performing Arts Students



**Figure 5.** Performing arts students.

**Figure 6**

Conventional High School Students

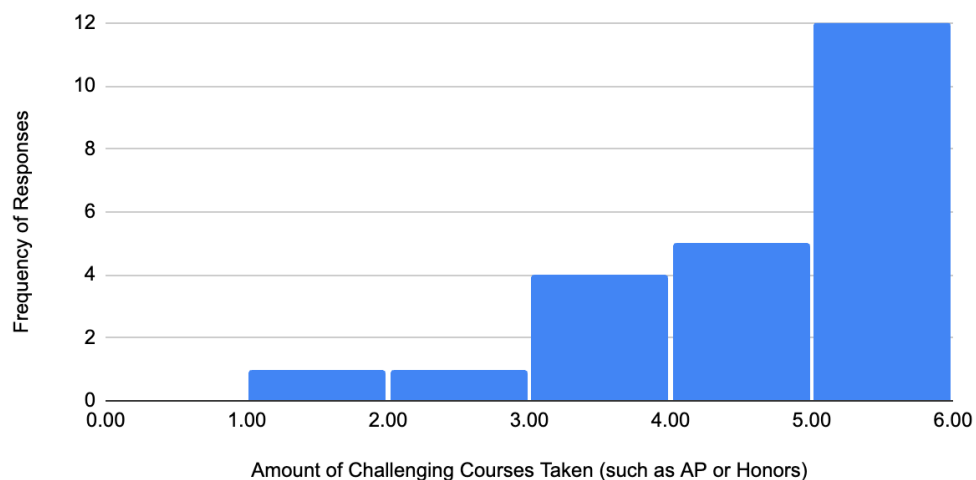


**Figure 6.** Conventional high school students.

Third, the survey asked about the amount of challenging courses that each participant is currently taking, such as the number of Honors and/or AP classes that they currently have in their schedule. The histogram representing the rates for the performing arts students are shown in Figure 7 while the rates for the conventional students are shown in Figure 8.

**Figure 7**

Performing Arts Students



**Figure 7.** Performing arts students.



Figure 8

Conventional High School Students

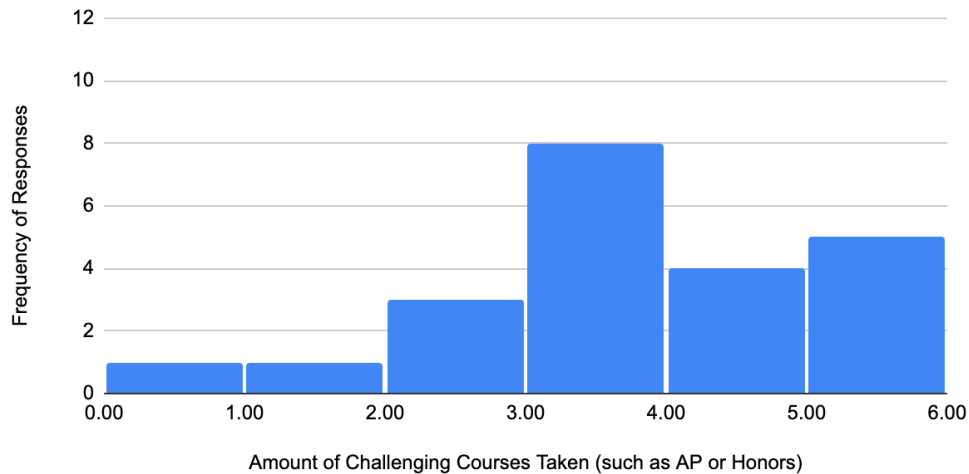


Figure 8. Conventional high school students.

## Qualitative Responses

Along with the above data, the survey also collected qualitative explanations where the participants had the opportunity to explain why they made the numerical choices that they did for two of the mediating variables. These explanations were an effort to mitigate any confounding variables that might arise because of different situational variables and unique pressures that might be enacted on the participants.

There had been 60 responses total to this survey with 30 responses from performing arts students and the remaining 30 responses from conventional high school students. For the first mediating variable of each participant's unique familial pressures with regard to their academic performance, 8 responses from the performing arts students and 10 responses from the conventional high school students indicated that their social environments didn't care about their academic performance. Additionally, 16 responses from the performing arts students and 11 responses from the conventional high school students articulated that their social environments placed a high emphasis on grade-point achievements. Finally, 6 performing arts students and 9 conventional high school students responded that their social environments simply wanted them to have a bright future, no matter their academic results in high school.

For the second mediating variable, the academic pressures that the participants place on themselves to succeed and the personal goals that they set for themselves that might result in this academic pressure, was analyzed. 6 performing arts students and 5 conventional high school students simply stated that "not failing" was their goal; 12 performing arts students and 12 conventional high school students articulated that "getting all A's" was their goal; 6 performing arts students and 4 conventional high school students responded that having a bright future, such as going to a good college or getting a good job, was their goal; and 5 performing arts students and 9 conventional high school students stated that trying their best in every academic endeavor was their goal.

The third mediating variable was collected to see if there was a significant enough difference to contribute any differences in overall academic anxiety levels to the level of classes that are taken. Since this study is trying to see the correlation that attending a performing arts high school has on the academic anxiety of the students, this will not be a significant part of the conclusions that this study will draw from the data. Therefore, this might be an area of potential future research regarding how a rise in more academically rigorous classes might affect the amount of anxiety that students face in their academic careers.

## Data Analysis of the Findings

To determine the statistical significance of the data, a two-tailed Mann-Whitney U Test was used to analyze whether or not the type of school a participant attended and the average amount of anxiety that they experienced about their academics were correlated enough numerically to be statistically significant. To do this, I converted every participant's score from their Academic Anxiety Scale into a number between 1 and 4, with 1 meaning "Not Anxious", 2 meaning "Mild Academic Anxiety", 3 meaning "Moderate Academic Anxiety" and 4 meaning "High Academic Anxiety".

For context, in the Mann-Whitney U Test, the "rank", which is essentially the number that is assigned to each value in the combined data set, is used for non-parametric comparisons which help to determine the statistical significance of the data. Since the Mann-Whitney U test can be used for two independent groups and the correlation between the two, I was able to use this test to help find statistical significance. For this test, the data from the performing arts students were in Sample 1 while the data from the conventional students were in Sample 2.

In Sample 1, the expected U value was 450 had there not been any statistical significance. However, the U value for Sample 1 ended up being 281, which is very different from the expected U value as it is almost half of what was expected. Due to this difference, it could be said that there is a statistically significant difference for Sample 1. Much like with Sample 1, the expected U value for Sample 2 was 450, but the actual U value for Sample 2 ended up being 619, which is also substantially different than the expected U value, as it is almost, which also suggests that this data is statistically significant.

Therefore, I used the Mann-Whitney U Test to show that there was a significant difference between the level of academic anxiety that was experienced and the type of school attended to answer my research question: "How does having an arts focus in high school impact the average amount of academic anxiety that Orange County high school students have when compared to their conventionally schooled counterparts while considering the mediating variables of home environment, personality, and academic intensity?"

### Home Environment Mediating Variable

A unpaired, two-tailed t test was used in order to determine whether or not there was enough of a difference between the amount that the participants felt that their home environment impacted their academic anxiety of performing arts students and conventional students to be considered statistically significant. When the t-test was applied, the t-value was 0.86644 and the associated p-value was 0.389819, which was not significant at  $p < .05$ . Additionally it is important to note that when the p-value is less than 0.05, then there is a less than 5 percent likelihood that the difference between the groups was due to random chance and therefore is statistically significant. Therefore, there is no statistically significant difference between the amount that the participants felt that their social environment impacted their academic anxiety of performing arts students and conventional students.

### Personal Goals Mediating Variable

A unpaired, two-tailed t test was used in order to determine whether or not there was enough of a difference between the amount that the participants felt that their personal goals impacted their academic anxiety of performing arts students and conventional students to be considered statistically significant. When the t test was applied, the t-value was 1.54298 and the associated p-value was 0.128274, which was not significant at  $p < .05$ . Therefore, there is no statistically significant difference between the amount that the participants felt that their personality impacted their academic anxiety performing arts students and conventional students.

## Academic Intensity Mediating Variable

An unpaired, two-tailed t test was used in order to determine whether or not there was enough of a difference between the amount of challenging classes that performing arts students and conventional students were taking to be considered statistically significant. When the t test was applied, the t-value was 1.46952 and the associated p-value was 0.147095, which was not significant at  $p < .05$ . Therefore, there is no statistically significant difference between the amount of challenging classes that performing arts students and conventional students were taking.

Ideally, it would have been a more comprehensive study had I collected data about the participant's grade level as that would affect much of the academic anxiety that they might be feeling. For example, a junior in high school might be feeling more anxious about their academics than their freshmen counterpart no matter the type of school that they attend, simply because there is less of a figurative "academic plate". However, the impact of the grade level on the amount of academic anxiety was not the variable that I was testing and combined with the fact that this data was collected through convenience sampling with the people near me, which happened to consist mostly of juniors and seniors in high school, I was unable to incorporate this variable into my study.

## Conclusions, Limitations, and Implications

Therefore, an answer to the research question, "How does having an arts focus in high school impact the average amount of academic anxiety that Orange County high school students have when compared to their conventionally schooled counterparts, while considering the mediating variables of home environment, personality, and academic intensity?" was found.

Generally speaking, there has been a lot of research that centered around the benefits that some arts intervention may bring to the psychological health of students (Bowen and Kisida, 2019). However, that is not always the case as having an intense arts focus has been correlated to have negative impacts on psychological health (Vaag, 2021). Therefore, the gap in the body of knowledge was that while there had been research regarding the impact that having a fine arts major had on the psychological health of college students when compared to their non-art major counterparts, such as Lee 2023, there had been limited research on performing arts students who deal with both academic and arts stressors as opposed to conventional students who only deal with academic stressors. In addition, there has been research done on the moderating variables of self-efficacy and creativity, such as Jin & Ye 2022, but limited research on the moderating variables of home environment, personal goals, and academic intensity. Hence, this study utilized a mixed methods approach in order to quantitatively find the relationship between the type of school attended and the amount of academic anxiety that was experienced during this time.

This study found that there was a statistically significant relationship between going to an arts focused high school and the average amount of anxiety that they felt in terms of their academics. The u values of performing arts high school students' academic anxiety showed that there was a strong relationship between the two factors. Therefore, the data from this study has proven that my hypothesis that the level of anxiety that the students faced in terms of their academic anxiety increased because of the additional work that is given to them on top of the conventional academic schooling that is already stressful. This study was able to contribute to the existing body of knowledge by adding in new knowledge about whether attending a performing arts high school and, by extension, being constantly exposed to the arts would positively or negatively affect the students' anxiety rates when compared to their conventionally schooled counterparts. This is also in agreement with the study that was done by Lee in 2023 where they stated that art-majors generally have more mental strain and more time spent on coursework when compared to their non-art major counterparts. These results matter as it adds support to the correlation between rigorous, high level arts focused education and academic anxiety that many students experience.

However, there are some limitations to this research. For instance, there was a smaller sample size than many of the other studies. In Orange County, there are 3.168 million people living in Orange County, with 209,000 of them

being high school aged students. However, my study only uses a sample size of 60 participants which is only about 0.03% of the entire population. Therefore, this might not be an accurate representation of the full population of Orange County high school students. Additionally, as with many other studies that deal with self-reporting, there are always the harms of self-reporting and the accuracy of it. There is a chance the data might be skewed due to the participants' different biases. Due to different biases such as demand characteristics, which is when the participant tries to give "good" data, or social desirability bias, which is when the participant tries to "look good." Therefore, the participant may have ended up skewing the data by mistake. This may have resulted in an inflated number of participants who claimed that they felt anxiety in terms of their academics at school.

Therefore, for future studies conducted after this, these limitations could be addressed and helped by making sure to include a larger sample size, including random sampling, and more academic anxiety scales to ensure the amount of anxiety that each student is facing.

Hence, this study has findings that suggest implications for the amount of anxiety that performing arts-focused high schoolers face in terms of their academics. With this study, the next generation can make informed decisions based on the findings to lessen their anxiety about academic schooling, alleviating the burden on high school students in an already stressful time. In addition, by learning about whether being constantly exposed to the arts creates a positive or hostile environment for the students academically, policymakers and school officials can modify and develop new programs to help support the students to have a healthier environment in their high school years. This study also shows implications and limitations that can turn into future research questions, such as in terms of other schools like sports academies. One such future research question could be the impact that attending a STEM focused high school has on academic anxiety through the moderating variables of physical health and personal goals. Finally, the research that was done in this study helped to showcase some of the everyday struggles that high school students face both at school and home, which is such an important thing for the next generation in which life will continue. Anxiety is a very important issue and one that is often underscored by the general public when it comes to high school students, but it can be a very real, and important subject that should be discussed in a school environment.

In the end, the study shows that there was a correlation that was statistically significant between the level of academic anxiety that a high school student faced and what type of high school, performing arts or conventional, the student attended. Although there were limitations, this study helps to expand the field of research with regard to the effect that an arts-based education has on the mental health of the students, and what kind of research could be done more.

## Acknowledgments

I would like to thank my advisor for the valuable insight provided to me on this topic.

## References

- Abrams, Z. (2023). Kids' mental health is in crisis. here's what psychologists are doing to help. Monitor on Psychology. <https://www.apa.org/monitor/2023/01/trends-improving-youth-mental-health>
- American Psychological Association. (n.d.). Anxiety. American Psychological Association. <https://www.apa.org/topics/anxiety>
- Bhatia, M. S., & Goyal, A. (2018). Anxiety disorders in children and adolescents: Need for early detection. Journal of postgraduate medicine. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5954816/>

- Bowen, D. H., & Kisida, B. (2019, February). Investigating Causal Effects of Arts Education Experiences: Experimental Evidence from Houston's Arts Access Initiative. Rice University.  
<https://rice.app.box.com/s/nyrlcfjogvknkzmjo2tk49kdpckhvj3hi>
- Cassady, J. C., Pierson, E. E., & Starling, J. M. (2019, February 1). Predicting student depression with measures of general and academic anxieties. *Frontiers*.  
<https://www.frontiersin.org/articles/10.3389/feduc.2019.00011/full>
- Celano, C. M., Daunis, D. J., Lokko, H. N., Campbell, K. A., & Huffman, J. C. (2016, November). Anxiety disorders and cardiovascular disease. *Current psychiatry reports*.  
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5149447/>
- An equity profile of Orange County ... USC Dornsife. (2016).  
[https://www.policylink.org/sites/default/files/Orange\\_County\\_Profile\\_v20\\_0.pdf](https://www.policylink.org/sites/default/files/Orange_County_Profile_v20_0.pdf)
- Guyon, A. J. A. A., Studer, R. K., Hildebrandt, H., Horsch, A., Nater, U. M., & Gomez, P. (2020, August 25). Music performance anxiety from the challenge and threat perspective: Psychophysiological and performance outcomes - BMC psychology. *BioMed Central*.  
<https://bmcp psychology.biomedcentral.com/articles/10.1186/s40359-020-00448-8>
- J., B. D. S. (2007). Profiles of adolescent stress: The development of the Adolescent Stress Questionnaire (ASQ). *Journal of adolescence*. <https://pubmed.ncbi.nlm.nih.gov/16750846/>
- Jin, X., & Ye, Y. (2022, June 29). Impact of fine arts education on psychological wellbeing of higher education students through moderating role of creativity and self-efficacy. *Frontiers*.  
<https://www.frontiersin.org/journals/psychology/articles/10.3389/fpsyg.2022.957578/full>
- Kumar, A. (2013). Relationship of academic anxiety among adolescents in ... *International Journal for Research in Education*. [https://www.rajmr.com/ijre/wp-content/uploads/2017/11/IJRE\\_2013\\_vol02\\_issue\\_07\\_07.pdf](https://www.rajmr.com/ijre/wp-content/uploads/2017/11/IJRE_2013_vol02_issue_07_07.pdf)
- Lee, F. M., Koch, J. M., & Ramakrishnan, N. (2023). Fine arts students: Mental Health, stress, and time on ... *Taylor & Francis Online*. <https://www.tandfonline.com/doi/abs/10.1080/87568225.2023.2175755>
- Lee, S. P., Sung, I.-K., Kim, J. H., Lee, S.-Y., Park, H. S., & Shim, C. S. (2015, March 30). The effect of emotional stress and depression on the prevalence of digestive diseases. *Journal of neurogastroenterology and motility*. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4398234/>
- Miendlarzewska, E. A., & Trost, W. J. (2014, January 20). How musical training affects cognitive development: Rhythm, reward and other modulating variables. *Frontiers in neuroscience*.  
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3957486/>
- Moya, M. S., Caldarella, P., Larsen, R. A. A., Warren, J. S., Bitton, J. R., & Feyereisen, P. M. (2022). Addressing adolescent stress in school: Perceptions of a high school wellness center. *Education & treatment of children*. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9281574/#CR7>

Orange County, California. United States Census Bureau. (2022).  
[https://www.census.gov/glossary/#term\\_Populationestimates](https://www.census.gov/glossary/#term_Populationestimates)

Osborn, T. L., Ndeti, D. M., Sacco, P. L., Mutiso, V., & Sommer, D. (2023, November). An arts-literacy intervention for adolescent depression and anxiety symptoms: Outcomes of a randomised controlled trial of pre-texts with Kenyan adolescents. *EClinicalMedicine*. <https://pubmed.ncbi.nlm.nih.gov/38192586/>

Schneider, V., & Rohmann, A. (2021, March 11). Arts in education: A systematic review of competency outcomes in quasi-experimental and experimental studies. *Frontiers*.  
<https://www.frontiersin.org/articles/10.3389/fpsyg.2021.623935/full>

Stana, A., & Oprea, C. (2014). Test anxiety and achievement goal orientations of students at a Romanian university. *ScienceDirect.com*.  
<https://www.sciencedirect.com/science/article/pii/S187704281503308X/pdf?md5=d5434eaa4f4356bbea0af12ef6eaa8a3&pid=1-s2.0-S187704281503308X-main.pdf>

Stuckey, H. L., & Nobel, J. (2010, February). The connection between art, healing, and public health: A review of current literature. *American journal of public health*.  
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2804629/>

Sundjaja, J. H. (2023, July 17). McNemar and Mann-Whitney U tests. *StatPearls* [Internet].  
[https://www.ncbi.nlm.nih.gov/books/NBK560699/#:~:text=Mann%2DWhitney%20U%20test%20is,the%20same%20shape%20\(distribution\)](https://www.ncbi.nlm.nih.gov/books/NBK560699/#:~:text=Mann%2DWhitney%20U%20test%20is,the%20same%20shape%20(distribution))

T-test theory for surveys: An introduction. *Qualtrics*. (2023, October 31).  
<https://www.qualtrics.com/experience-management/research/t-test-analysis/#:~:text=What%20is%20a%20t%2Dtest,mean%20and%20a%20standard%20value>

U.S. Department of Health and Human Services. (n.d.). Any anxiety disorder. *National Institute of Mental Health*. [https://www.nimh.nih.gov/health/statistics/any-anxiety-disorder#:~:text=An%20estimated%2031.9%25%20of%20adolescents,than%20for%20males%20\(26.1%205\)](https://www.nimh.nih.gov/health/statistics/any-anxiety-disorder#:~:text=An%20estimated%2031.9%25%20of%20adolescents,than%20for%20males%20(26.1%205)).

Vaag, J., Bjerkeset, O., & Sivertsen, B. (2021, May 24). Anxiety and depression symptom level and psychotherapy use among music and art students compared to the general student population. *Frontiers*.  
<https://www.frontiersin.org/journals/psychology/articles/10.3389/fpsyg.2021.607927/full>

Why Teens Stress. *University of Washington*. (n.d.). <https://depts.washington.edu/designme/about-us-2/why-teen-stress/>

Wigert, B., Reiter-Palmon, R., Kaufman, J. C., & Silvia, P. J. (2012). Perfectionism: The good, the bad, and the creative. *DigitalCommons@UNO*. <https://digitalcommons.unomaha.edu/psychfacpub/24/>

Xiong, R. (2024). An Analysis of AP Classes Growth and the Effects on Student Stress . *IJ High School Research*. [https://terra-docs.s3.us-east-2.amazonaws.com/IJHSR/Articles/volume6-issue1/IJHSR\\_2024\\_61\\_136.pdf](https://terra-docs.s3.us-east-2.amazonaws.com/IJHSR/Articles/volume6-issue1/IJHSR_2024_61_136.pdf)

Yin, O., Parikka, N., Ma, A., Kreniske, P., & Mellins, C. A. (2022, September 30). Persistent anxiety among high school students: Survey results from the second year of the covid pandemic. PloS one. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9524706/>