Examining the Prevalence and Experiences of Music Performance Anxiety in Young Adolescent Students

ACCEPTANCE

This dissertation, EXAMINING THE PREVALENCE AND EXPERIENCES OF MUSIC PERFORMANCE ANXIETY IN YOUNG ADOLESCENT STUDENTS, by KATIE O'BRIEN, was prepared under the direction of the candidate's Dissertation Advisory Committee. It is accepted by the committee members in partial fulfillment of the requirements for the degree, Doctor of Philosophy, in the College of Education & Human Development, Georgia State University.

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EXAMINING THE PREVALENCE AND EXPERIENCES OF MUSIC PERFORMANCE ANXIETY IN YOUNG ADOLESCENT STUDENTS

By

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Under the Direction of Dr. Martin Norgaard and Dr. Jennifer Darling-Aduana

ABSTRACT

Many music activities involve live performance. The psychological and physiological effects of such musical engagement can aid in the development of identity for young musicians. Unfortunately, many school-aged musicians find that performing for others can have a deleterious effect. Repeated negative experiences can lead to the development of music performance anxiety (MPA) (Kenny, 2011). This phenomenon can be debilitating, having a detrimental effect on a music student's experience, and potentially driving a student to prematurely quit music study. As such, MPA can negatively impact educational music programs and may raise a barrier to access to the lifelong benefits that music participation can provide, such as cognitive and social-emotional benefits (Elvers et al., 2017; Guhn et al., 2019; Welch et al., 2014; Welch et al., 2020). The purpose of this mixed methods study was to gather quantitative and qualitative information about the prevalence and experience of MPA in young adolescents in Grades 6-8 in both vocal and instrumental ensembles at a private school in the southeastern United States. This age group has not been adequately represented in MPA research to date and are at an age where they could be experiencing public performing for the first time. Thus, this study aims to help fill this gap, gaining insights into what the beginnings of MPA might look like. This study follows an explanatory sequential design, beginning by administering a validated survey to assess the prevalence of MPA ($N = 51$) and following up with semi-structured interviews ($n = 7$) to expound upon the students' experiences. Through a greater understanding of MPA that was gathered from this study, music teachers can better empathize and structure their pedagogy so that MPA is less of a barrier to music participation.

INDEX WORDS: Music performance anxiety, middle school, adolescent, ensembles

EXAMINING THE PREVALENCE AND EXPERIENCES OF MUSIC PERFORMANCE ANXIETY IN YOUNG ADOLESCENT STUDENTS

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- To anyone who has encountered nerves while learning and trying something new. May we all find the courage to get out of our own way, and to help support others on the journey.

[1] The name of this teacher has been pseudonymized.
[2] The name of my study site has been pseudonymized.

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1. INTRODUCTION: Examining the Prevalence and Experiences of Music Performance Anxiety in Young Adolescent Students

"Stage fright is my worst problem. A voice is very intimate. It's something of your own. So there's always this fear, because you feel naked. There's a fear of not reaching up to expectations."

- Andrea Bocelli, opera singer, (Hardy, 2012)

While many find joy and meaning in private musical pursuits, much of music's power is within live performance, connecting the music, the performer, and the audience. The presence of an audience is a significant catalyst for a performer, influencing both physical and emotional aspects of the performance experience. Unfortunately, many musicians (such as the well-known performer, Andrea Bocelli), find that the presence of an audience can create fear that affects the authenticity of one's voice both literally and figuratively. For example, fear during performance can affect the timbre of one's voice, manifested through instances of dry mouth, breathing disturbances, and similar features (Kenny, 2011). Due to these physiological responses, the presentation of one's musical voice, and their identity within, can be compromised.

The pressure of performing a task in front of others has been shown to create trepidation in athletes (Smith & Smoll, 1990), public speakers (Fremouw & Breitenstein, 1990), test-takers (Geen, 1987), actors (Kaplan, 1969), dancers (Schnitt, 1990), and musicians (Salmon, 1990) alike, providing many opportunities for study. Historically, multiple terms have been used to describe this trepidation toward public performance, such as "stage fright," "performance anxiety," "social anxiety," "social anxiety disorder," and for music specifically, "music performance anxiety" (Kenny, 2011). Due to these discrepancies, both academic and public knowledge of music performance anxiety is obfuscated by the variety of terms and definitions that are used in discussion of the phenomenon. In this project, I will use the term music performance anxiety (MPA) as it is the most recent terminology (Kenny, 2011).

Tan et al. (2018) define MPA as “an enduring apprehension of musical performance that may or may not be related to one’s actual level of musical ability or achievement, and may or may not have detrimental effects on performance” (Tan et al., 2018, p. 209). Notable performers across a variety of genres such as Cher, Brian Wilson, Adele, and Barbara Streisand have reported suffering from MPA, thereby raising visibility and awareness of the issue (Leblanc et al., 1997; Steptoe & Fidler, 1987). This awareness, however, is largely in regard to professional performers, spurring the question, “how, and when in one’s experience with learning music does one develop music performance anxiety?”

Musical learning often involves live performance and sharing music with others. Sadly, many young musicians find that the presence of any sort of audience, even if it is just their supportive teacher in the less formal setting of the classroom, can have an adverse effect on their performance (Ryan et al., 2021). Therefore, in the effort to catch MPA earlier, I chose to study middle school ensembles. These ensembles are often students’ first experiences with playing in front of others, not only in the group setting of concerts, but in rehearsals in which various sections or individuals might be isolated to play a section in front of the rest of the ensemble, and in small group and/or individual lessons with the teacher. Middle school is also a pivotal time as adolescent students are formulating their identities and determining what role, if any, music has in their idea of self (North & Hargreaves, 1999). Therefore, this project explored the prevalence and experiences of MPA in middle school students. This paper describes this dissertation project with the aim to ultimately better understand young adolescents’ MPA in order to improve their experiences in musical learning.

Epistemology

Personal Experience and Significance

How I came to be interested in music cognition, and MPA specifically, has been a journey as I have felt torn between science and music for some time. While my family highly encouraged musical activity, I perceived the main focus of our family to be on academics, with music as an extracurricular activity. Throughout my K-12 education, I took part in the majority of advanced coursework available, as well as most of the musical activities available, including choir, jazz choir, musical theater, band, jazz band, marching band, and competitive county, regional, and state ensembles. Through participating in these activities, I was told that I had a “talent” for music. However, given my academic strengths, the career focus was always geared toward something in the sciences. Despite this, in my junior year of high school, I felt a strong call to pursue a musical career where I could share my passion with others through performing and teaching, feeling that I would never forgive myself if I did not try. I distinctly remember some of my high school teachers expressing disappointment that I was “wasting” my skills going into the music field. My parents agreed to enroll me in voice lessons (at a later age than most who go on to pursue vocal performance) to give me the best shot possible for college auditions during my senior year of high school. To my surprise and delight, I was accepted into the bachelor’s degree program at the Ithaca College Conservatory for Music in New York as a vocalist for a double major in Vocal Performance and Music Education.

Starting as a freshman at the conservatory, it quickly became apparent that I had been a “big fish in a small pond” and that I was now in a brand-new talent pool. Here, I had my first formative experiences with MPA. While my perfectionistic tendencies seemed to serve me well prior to conservatory, they increasingly became impediments as I progressed through my degree.

With my singular drive towards a music degree, I based my self-worth on my performance quality, and on my performance quality compared to my perceptions of others' performances. I consistently failed to meet my own standards of perfection, which negatively impacted my self-esteem. I then found my thoughts following cognitive distortions, catastrophizing failed audition results, and having polarized thinking that undermined my accomplishments, further cementing a lower self-worth. Therefore, while I had been nervous for performances in the past, my thoughts and emotions through the constant barrage of auditions and solo performances led me to feel that I was not "as good" as everyone else. This pattern is not simply anecdotal, but has also been found in MPA literature (Osborne & Franklin, 2002; Shafran & Mansell, 2001). While I thrived in group and small ensemble performances, I felt increasingly frustrated that I did not consistently feel the same productivity and joy in my solo performances due to anxiety. This brought me to realize that while I loved (and still love) performing, I did not want solo singing to be my career, and I pursued teaching after graduation.

After earning my bachelor's degree, I taught middle school chorus, band, and general music for five years. During my first year of teaching, I also started a middle school theater program, where I encountered many students experiencing MPA, particularly as most had never been on stage before. As the sole sixth grade music teacher for five years, I saw a pivotal time in students' musical education as they were required to take a music course in sixth grade, while it was optional in seventh grade according to state requirements. Throughout my teaching career, I saw students quit musical study, or choose the non-performance based general music class, due to their own claims that they were not "good at music," were not "musical," or that performing made them too nervous. As I was teaching, I earned my master's degree in Music Psychology through the University of Sheffield, and became very interested in teaching in a psychologically informed way in order to foster better musical experiences for more students. This sparked my curiosity in MPA, and in finding ways that teachers could help students in their MPA experiences, empowering students through their musical activity.

Positionality

I conducted this research from the perspective of being both a performer and an educator, and therefore had investment in the results beyond satiating my research inquiry. While I am now pursuing my doctorate degree full-time, and therefore am not currently experiencing MPA or teaching those struggling with it, I consider myself as having worked both emic (i.e., with an insider perspective) and etic (i.e., with an outside perspective) in my study (Given, 2008). Since I have experienced MPA, this commonality between myself and my participants may have encouraged trust and openness in interview responses (Dwyer & Buckle, 2009). As I was not performing or teaching at the time of the study, I was not a member of the community from which I was sampling. As such, I needed to be continually reflective and reflexive regarding my positionality and how my positionality potentially affected my interpretations of data at any given time, as this could have been in flux throughout the course of the study. My positionality is one reason that I thought it important to have a quantitative portion with a validated scale in my study, as well as a qualitative portion, to encourage greater data saturation.

As a White, college-educated woman, I need to continually be aware of my privilege as I research a variety of students who may not have had the same benefits as I have. I come from a Western music focused, conservatory background, which is a space that is dominated by the White narrative. The socioeconomic backgrounds of my participants also played a role, as musical participation often calls for more money (e.g., purchasing instruments, lessons), and parental involvement (e.g., driving to and from rehearsals). Growing up middle class, my parents were able to afford private music lessons as well as summer intensives. These additional opportunities gave me increased performance training and experience, which has been shown to lessen MPA (Steptoe & Fidler, 1987). As a child, being told I was “talented” certainly encouraged me to continue music to the point of choosing music as my field of study. As a researcher, I want to make sure that I also focus on those who are not receiving this feedback and are potentially discouraged as a result. I aim to increase awareness of youths’ MPA and to encourage more students to find joy in learning and sharing their music with others.

Background of the Problem

In regard to MPA, middle school students are arguably the most vulnerable population, and the least researched (Kenny & Osborne, 2006). While very young children rarely exhibit MPA, proclivities to MPA can be seen as children develop cognitive and meta-cognitive capacity and self-perception and reflection, gaining perspective including feelings of shame (Kenny & Osborne, 2006). Age of the individual has been shown to be a factor in MPA (Kenny, 2011), and MPA seems to peak in adolescence (Brugués, 2011). Increased age and years of training and performing can potentially decrease MPA (Sadler & Miller, 2010). This said, students are naturally younger and lack experience as they are still learning their instruments, the inner workings of music, and performance skills, thereby compounding the problem (Fernholz et al., 2019). As a result, students have been found to have lower self-esteem and higher MPA than adult musicians, putting them at risk for further complications with MPA (Sickert et al., 2022).

MPA has the potential to affect students in any setting with an audience, including the learning process in lessons with their teachers. Following the Yerkes-Dodson (1908) model of arousal and performance, the addition of a listener adds a level of arousal in performers, which at a facilitating level, is referred to as a performance boost (Tan et al., 2018). Following the inverted-U model (Yerkes & Dodson, 1908), as the level of arousal increases, so does the quality of the performance. However, too much of this arousal can become debilitating as it pushes toward anxiety, and the student's experience and satisfaction with the performance then suffers, likely affecting the quality of the performance. With decreased satisfaction in performing, it is probable that repeated experiences with MPA may lead to a student becoming discouraged and quitting music as a result (Gómez-López & Sánchez-Cabrero, 2023).

Rationale of the Study

Performing for others is often an integral part of learning music. The addition of any sort of audience adds a level of arousal that can push the performer toward anxiety (LeBlanc et al., 1997). This anxiety can be debilitating and can potentially drive students to quit music. However, as of now, most studies that examine MPA has been with adults, with a resultant lack of awareness about the experiences of adolescent student musicians. This absence of awareness is critical, as students lack the proven protective barriers of both age and performing experience (Sadler & Miller, 2010). Additionally, students are at a crucial age where they are developing their self-efficacy, self-concept, and identity (North & Hargreaves, 1999). The bulk of MPA research that is thus far focused on professionals (or music majors training to be professionals) sheds some light on the problem, and informed this study, but it does not readily transfer for younger students who are ready to quit music due to their MPA. Due to this, I focused my study on a younger population than in previous literature, earlier in the learning process of music. In doing so, I hope to reduce the potential stigma surrounding MPA among middle-school-aged populations, and to inform teachers working with this age group. Teachers have a profound role in developing student musicians, and so need more insight to guide their pedagogy. Therefore, the purpose of this study was to examine the prevalence of MPA in middle school students, and to describe their experience of MPA.

Theoretical Perspective

Theoretical Orientation

Each individual has a unique experience with MPA, both in nature and in severity, and these individual meanings can change across various situations. Therefore, in exploring this problem, I took on the philosophical position of pragmatism, believing that "meanings exist both objectively and subjectively through intersubjectivity" (Wallace & Wray, 2021, p. 107). MPA has physical, mental, emotional, and behavioral manifestations that students experience objectively (i.e., physical manifestations) and subjectively (i.e., mental and emotional manifestations). Students' behavior in reaction to MPA, then, calls for an examination of intersubjective meanings. A pragmatic approach fosters this, as pragmatists believe in a dualism of the existence of basic "truths," but multiple "truths" that are modified by context (DeCuir-Gunby & Schutz, 2017). Basic "truths" are represented by quantitative data, with the understanding that this data is experienced differently based on the context each individual exists in, which can be examined qualitatively. This recognition of different qualities of "truths" and the intersubjectivity required to assess such truths makes the problem of examining the prevalence and experiences of MPA a multifaceted one.

A pragmatic position supports an eclectic and adaptive approach to a problem, using any means necessary to find the answers to a question (Creswell, 2009). My study was guided by two overarching questions: To what extent do middle school students experience MPA in their school music program, and how do they experience the phenomenon? With these multifaceted questions, I required the responsive approach that pragmatism encourages. My research questions contained both quantitative and qualitative lines of inquiry, and so I required both methodologies to find the answers. Therefore, I used mixed methods, combining the power of quantitative and qualitative data analysis (Creswell, 2009). This quantitative data took the form of survey responses using a validated scale. This said, these numbers only provided one snapshot of the students' stories of MPA. Therefore, I followed up the survey with qualitative methods. Qualitatively, I utilized semi-structured interviews, using open-ended questions with students in order to construct a narrative of my participants' experience.

Macro-Theory

Since MPA has physical, mental, emotional, and behavioral manifestations, I adopted a constructivist view, as students construct their understandings and knowledge of MPA through encountering this myriad of experiences (Steffe & Gale, 2009). Constructivism is a fitting guide for my study as I studied learners, and the learned behavior that MPA can be (Barlow, 2000). In this study, my focus was on the meanings that the music students made of their MPA and its influence on their musical learning through their learning experiences with MPA (Wilkinson & Hanna, 2016). Therefore, this constructivist approach led to the development of both quantitative and qualitative research questions, as both methods of inquiry led to a more complete construction of my understanding of students in regard to MPA. To gather data on my participants' experience, I used self-report study instruments (e.g., surveys and interviews), emphasizing a subjective, first-person point of view. Constructivism also informed my choice to use open-ended questions in the interview stage of my study, to investigate how students construct their understanding of MPA.

Self-report measures and open-ended questions are key to constructing a deeper understanding of young adolescents' experiences with MPA, as the middle school age group is underrepresented in MPA research to date (Blair & van der Sluis, 2022; Clearman, 2020; Gómez-López & Sánchez-Cabrero, 2023), and their perspectives must be gathered first-hand. Collecting data in this variety of ways also aided in data crystallization to build a “deepened, complex, thoroughly partial understanding of the topic” (Richardson, 1994, p. 522). My theoretical framework of pragmatism and constructivism allowed me to utilize data crystallization, resisting the dichotomy of quantitative/qualitative (Potter, 1996) as I strove to find and share my participants’ full stories of their experiences with MPA (Esposito & Evans-Winters, 2022). Learning about how students experience MPA helps to fill the gap in the literature, and could aid in the goal of then constructing pedagogical interventions for this age group.

Micro-Theories. Throughout this study, I used tacit theories regarding music performance (e.g., Baumeister’s 1994 explicit monitoring theory, Csikszentmihalyi’s 1990 flow theory, and Eysenck & Calvo’s 1992 processing efficiency theory), learning (e.g., Young’s 1990 schema theory), and musical identity (e.g., Bandura’s 1977 self-efficacy theory and Covington’s 1984 self-worth theory) to underpin my research findings with external evidence (DeCuir-Gunby & Schutz, 2017). Of these micro-theories, I primarily focused on identity theories in my study. Especially in the qualitative interviews, I investigated MPA’s potential influence on musical identity, as I examined the overall effect MPA may have on a child’s likelihood to continue musical study or not. Therefore, I needed to interpret my data in light of such theories, particularly in the third stage of my design, where I interpreted the quantitative and qualitative data together.

Research Questions

While some measure of anxiety is a part of life integral to the human experience, and less than desirable performance experiences are certainly unavoidable (and even vital to learning), how, and how often, are middle school students experiencing anxiety at the detrimental level of MPA? This study aimed to answer the overarching questions; to what extent do middle school students experience MPA in their school music program, and how do they experience the phenomenon? These questions were broken into quantitative and qualitative lines of inquiry with the following research questions:

1. *What is the prevalence of MPA in grades 6-8 at a private school in the southeastern United States according to the Osborne-Kenny MPAI-A scale?* (Quantitative)
2. *Does the prevalence of MPA vary based on different factors (e.g., age, years of experience, type of ensemble)?* (Quantitative)
3. *How do middle school students recognize and describe their experiences with MPA in performances, the classroom, and their own practice?* (Qualitative)

Questions 1 and 2 required a quantitative approach, while my third query regarding the students' experiences of MPA necessitated qualitative inquiry. As such, this study followed an explanatory sequential mixed methods design. Through examining possible factors of MPA and hearing student perspectives, I aimed to improve the identification of the phenomenon and inform pedagogy to lessen MPA.

Goals of the Study

MPA has the potential to decrease a student's enjoyment of musical activity, and to create a negative ripple effect in music education programs. Therefore, this study addresses numerous goals on a micro and a macro scale, both temporally as well as in terms of the people affected by my research. Personally, this knowledge will guide me as I continue to explore the neuropsychology of music performance and its ramifications for teaching. This will inform my research after the completion of my dissertation, as I work to remove MPA as a barrier for musical activity, thereby making music education more accessible and enjoyable. Practically, the answers to these questions will help to instruct pedagogy and inform music educators as they strive to create open, inspiring, and nurturing musical environments. I also intend for this gained knowledge to shape music teacher education; preparing teachers-in-training to address MPA, which will therefore have a positive ripple effect on music education in schools. Intellectually, my study adds to the knowledge of performance anxiety, both in musical and non-musical settings. I believe that every act is a performance in some way, and so optimizing performance through getting our inner critic out of our own path truly drives me. Practically, I wish to use the data generated by this study to inform possible instructional strategies to boost students' self-efficacy in music and their resilience against MPA. Ultimately, work in the area of performance anxiety helps to make both performing and learning how to perform more transformative and enjoyable for learners.

Significance of the Study

This study is significant as most of the research to date (cited in the upcoming literature review) has been published in journals reporting topics such as psychology and medicine that music educators likely lack access to. To further explore this, in 2022, I conducted a content analysis of the National Association for Music Education's (NAfME's) practitioner journals (*Music Educators Journal, Journal of General Music Education,* and *Teaching Music*) to trace how issues related to MPA have been communicated to educators. Content analysis proceeded through quantitative measures (e.g., years of relevant mentions, frequency count) and qualitative measures (e.g., identifying themes and trends via coding). The earliest relevant mentions of these search terms in the 1940s revealed a paradigm of music as a health-promoting barrier against mental illness, not that musical activity itself could be the cause of anxiety (Gaston, 1945). Moving forward, articles provided anecdotal wisdom to combat MPA, such as emphasizing appropriate repertoire choice and adequate preparation (Haid, 1999), as well as encouraging students to engage in frequent performances (Meharg, 1988). Starting around the 1990s, articles like Ely's 1991 "Stop Performance Anxiety!" began to draw from brain science and psychology research in making recommendations for educators, such as utilizing cognitive rehearsal and relaxation techniques. Findings from my content analysis suggest that more research is needed with students, especially with younger students. Findings also indicated a need for information regarding MPA to move more readily from research publications into practitioner journals so that students may benefit from the reported findings. This is echoed in a 2023 systematic review that compared qualitative themes in existing scientific and professional literature, as well as interview transcripts from five piano teacher participants, and identified a gap between research knowledge of MPA and practical application for teachers (MacAfee & Comeau). Therefore, I proposed my study with a younger population, and I plan to publish the findings of my dissertation in a practitioner journal.

Delimitations

This study is limited to middle school music students within a private school in the southeastern United States due to the researcher's available access. As the first study of its kind in the United States according to my research, this mixed methods study is the beginning of a larger movement to determine the prevalence and experience of MPA in middle school students. Further research should include other populations geographically and demographically.

Additionally, this study could be replicated in even younger populations in an attempt to pinpoint the onset of MPA and catch the phenomenon before it starts.

Organization of the Following Chapters

The structure of the remainder of this paper follows dissertation protocol. Chapter 2 examines the existing body of research on MPA, its effects, and further effects on students, particularly regarding self-efficacy and identity. Chapter 3 reports my research methodology and the rationale for each decision made. This chapter will also describe the selection of participants, study procedures and their implementation, data collection methods, and data analysis methods. Chapter 4 describes the quantitative and qualitative results from this study, as well as the integration of these two data sources. Chapter 5 expounds upon these results and provides implications for music education, as well as limitations of this study and areas for further research. The document concludes with a bibliography of sources and appendices, including the survey instrument and interview questions utilized.

2. REVIEW OF THE LITERATURE

Performing for others is an essential constituent of learning music. The field of music education has historically recognized this, with key events such as the Yale Seminar in 1963, the Tanglewood Symposium in 1966, the Housewright Symposium: Vision 2020 in 1999, and the Music Educator's National Conference Centennial in 2007 situating performing as a major goal in music education, as well as stressing the responsibility of music education to improve the quality of life for both individuals and society (Choate, 1968; Madsen, 2000; Mark, 2008). The National Association for Music Education (NAfME) further recognizes the importance of teaching music performance by identifying performing as one of the main "Artistic Processes" in their latest standards, and stating that "students need to perform - as singers, as instrumentalists, and in their lives and careers" (NAfME, 2014). Unfortunately, many musicians find that the existence of an audience, even if it is a supportive and enthusiastic one, can have an adverse effect on their performance, with the potential to lead to music performance anxiety (MPA).

While the majority of research on MPA has been done in professional performers and undergraduate students (Kenny, 2011), MPA has been found in children as early as the age of three with self-report, biophysical markers, and observation of anxious behaviors in anticipation of performance (Boucher & Ryan, 2011). Despite students' increased risk factors for MPA, much less research has been done with this age group (Blair & van der Sluis, 2022; Clearman, 2020; Gómez-López & Sánchez-Cabrero, 2023). MPA in children was first discovered by accident in a 1979 study that was primarily focused on sports performance anxiety (Simon & Martens). In comparing test, sport, and musical activities in 9–14-year-old boys, the most anxiety-inducing solo activity was playing an instrument, while performing with a band caused the highest anxiety among the group activities tested (Simon & Martens, 1979). Since then, increased research interest has revealed that children exhibit similar physiological manifestations of MPA as adults, with a resultant negative impact on both their performance quality and self-esteem (Ryan, 1998; 2004).

The anticipatory anxiety of MPA often negatively affects a student's performance experience, and these pernicious quality- and enjoyment-reducing effects range wildly from performer to performer, and even on an individual scale from performance to performance. As a result, many terms have been used to describe the wide range of emotions that the addition of an audience brings, such as "stage fright," "performance anxiety," "social anxiety," "social anxiety disorder," and "music performance anxiety." Music performance anxiety (MPA) specifically has gone through several definitions, with each emphasizing different aspects of the performer, the audience, and the resulting performance. This lack of a cohesive definition (Fernholz et al., 2019) inhibits understanding of the phenomenon (Herman & Clark, 2023). The most widely used definition across research literature has been from Kenny:

> "The experience of marked and persistent anxious apprehension related to musical performance that has arisen through specific anxiety-conditioning experiences and which is manifested through combinations of affective, cognitive, somatic, and behavioural symptoms. It affects musicians for their entire lives and is at least partially independent of years of training, practice, and level of musical accomplishment. It may or may not impair the quality of the performance." (2009, p. 433).

However, while this definition is the most widely used in studies (if it is even reported), this definition focuses on the presence of "symptoms," which pathologizes the phenomenon. Additionally, the presence of "symptoms" may not be the focal point if MPA is inherent to the act of performing (Herman & Clark, 2023), and can even facilitate performance, depending on the individual and the context (Murphy et al., 2024). Further, there is not yet empirical support that MPA must “[affect] musicians for their entire lives” (Herman & Clark, 2023). For these reasons, I use a more recent, and a more concise definition for my study. Tan et al. (2018) describe MPA as “an enduring apprehension of musical performance that may or may not be related to one’s actual level of musical ability or achievement, and may or may not have detrimental effects on performance” (Tan et al., 2018, p. 209). This literature review will first provide an overview of the phenomenon of MPA using this definition.

As the psychology of music activity began to be recognized in the 1940s, this project was focused on peer-reviewed, published resources from this point to the present day. Perceptions and terminology of the phenomenon have changed over time, starting with early articles such as Dunham (1953) in “Stage Fright: Its Cause and Cure,” claiming to provide the “cure” to stage fright as simply a matter of “strength of mind” (p. 46) and growing to Herman and Clark’s (2023) “It’s Not a Virus! Reconceptualizing and De-Pathologizing Music Performance Anxiety,” which focuses on MPA as a “normal and adaptive response to the pressures of performance” (p. 1). Due to changing terminology over time, search terms for this literature review included "music,” “musicians," "performance anxiety," and "stage fright," with a primary emphasis on academic journals with a musical and/or psychological focus. I searched for these terms as available through APAPsychINFO, ERIC, and RILM. Sources focused on the anxieties of teachers, teachers-in-training, administrators, or parents were removed as this research was focused on student anxiety. I focused on student anxiety with search terms of “student,” “K-12,” “children,” and “adolescent,” after I gathered enough information on MPA generally, as much less research has been done in K-12 students (Blair & van der Sluis, 2022; Clearman, 2020; Gómez-López & Sánchez-Cabrero, 2023).

Drawing from the remaining items, this review of literature will explore why music students experience MPA. This section will include consideration of the site of my study with a section describing the interaction of MPA in students from a high-socioeconomic background. Next, I will describe the effects of MPA and strategies for coping with the effects. Then, while there is an increasing research interest in MPA, the findings have largely been regarding the impact of MPA, with a lack of insight into interventions (Blair & van der Sluis, 2022; Clearman, 2020; Gómez-López & Sánchez-Cabrero, 2023). As such, I will focus on interventions and their practicalities in the classroom. The aforementioned information surrounding MPA was vital in order to interpret the quantitative and qualitative findings from the survey and interview strands of my study. I conclude this literature review by considering implications for my study, and for better defining and diagnosing MPA with the aim of improving treatment. This said, most forms of anxiety are difficult to treat, and MPA sufferers are unlikely to reduce their performance anxiety to the level of non-anxious people (Kenny, 2005). Therefore, my aim in this study was to examine the prevalence and experience of MPA in a younger population, increasing the possibility to prevent the occurrence of MPA through pedagogy.

Performance Anxiety in Musicians: An Overview

Performing music for an audience can bring much satisfaction, with a resultant positive impact on well-being (Jian, 2022) and influence on one’s identity (Evans & McPherson, 2017). However, these benefits are only seen if music engagement is a rewarding experience (Hallam, 2010), and performing with MPA can leech the rewards from performing as this joyous activity becomes a worrisome one. This can be very distressing for those who love music but are held back by anxiety. As a result, there is a paradox as music-making can have positive impacts on well-being, but musicians potentially suffer from poor mental health, particularly for those who go on to pursue careers in music (Musgrave, 2023). Though studies have shown a decrease in performance anxiety with age and performing experience amongst professional musicians, notable performers across a variety of genres have reported suffering from performance anxiety (Leblanc et al., 1997; Steptoe & Fidler, 1987). Composer and virtuoso pianist Frédéric Chopin was so affected that he gave only 30 public performances in his career, admitting: “I am not fitted to give concerts. The audience intimidates me, I feel choked by its breath, paralysed by its curious glances, struck dumb by all those strange faces” (Kenny, 2011, p. 1). Following Tan et al.’s 2018 definition of MPA, these famous artists arguably were at a high level of musical ability and achievement, but still experienced “an enduring apprehension” that affected their performance experiences (p. 209). For K-12 students still learning their instruments, music theory, and performance skills, their lack of experience compounds the problem (Valentine, 2002), and MPA can affect students in any public setting, including throughout the learning process in school.

The addition of an audience adds a level of arousal in performers, which can have both positive and negative effects depending on whether it leads to social facilitation or social inhibition (Tan et al., 2018). Some level of arousal is desirable for an optimal performance as it energizes the performer. In this case, the effect of audience presence on performers is referred to as a performance boost (Tan et al., 2018). However, too much of this arousal can become debilitating as it pushes toward anxiety, and the performer’s experience and satisfaction with the performance suffers, likely affecting the quality of the performance. The Yerkes-Dodson law (1908) shows an inverted-U function between the level of arousal and the quality of the resulting performance, and has been used in many fields related to performing, such as public speaking and sports performance (Rowland & van Lankveld, 2019). This model is primarily depicting state anxiety, defined as a temporary form of anxiety that is associated with a specific stressful moment (Hutchins & Young, 2018).

Expanding from this, the stimulus needed to stimulate over-arousal, under-arousal, or optimal performance is different for each performer and performance situation. For example, each individual presents a certain level of trait anxiety as a relatively stable facet of their personality, making them more or less susceptible to anxiety in potentially stressful situations (i.e., state anxiety). Wilson (1994) extended the Yerkes-Dodson model by taking this into account, showing the interaction of one's innate trait anxiety, situational stress (i.e., state anxiety), and task difficulty. A performance's point on the curve of the Yerkes-Dodson model, or on the plane of optimal performance in Wilson's model would be influenced by three factors: the individual, the task, and the situation or context (Valentine, 2002). These three factors can also be considered as three sources of stress: trait anxiety (i.e., individual), task mastery (i.e., task), and situational stress (i.e., context) (Wilson, 2002). This more nuanced model of performance anxiety will be used to structure the description of why K-12 students experience MPA.

As an additional framework, LeBlanc's 1994 comprehensive theory of music performance anxiety will be used throughout the paper to elucidate the complex interactions of factors that could impact a student's experience of MPA. This hierarchical model starts with the student's individual characteristics and learning history, followed by the preparation of the performance, the performing environment, the performer's self-perceptions, the isolated act of performance, and the evaluation of performance (LeBlanc, 1994). Music educators have some degree of influence on many of these factors, and with awareness, can influence these factors to elicit optimal performance for each student in each performance.

Why Music Students Experience Music Performance Anxiety

Individual Factors

From both genetic and environmental influences, each individual has a unique disposition to, and experience with, MPA. These biological influences and early formative experiences play a role in the triple vulnerabilities model of anxiety disorders; general biological vulnerability, general psychological vulnerability, and disorder-specific psychological vulnerability (Barlow, 2000). General biological vulnerability can involve one's qualities of temperament such as neuroticism and introversion/extraversion. General psychological vulnerability relates to one's perceived control over stress and emotions. Disorder-specific psychological vulnerability relates to the learned behavior of a condition such as MPA (Barlow, 2000). From birth, genetics partially determine one's biological vulnerability to anxiety. For example, biological sex seems to be a factor in MPA, as studies have found that MPA is higher in females than in males (Coşkun-Şentürk & Çırakoğlu 2018; Osborne & Franklin, 2002; Tardif et al., 2024; Wesner et al., 1990), as early as in upper elementary grades (Ryan, 2005). This said, it is important to note that these differences may be due in part to how males and females typically display anxiety societally (Ryan, 2015).

Following the genetics set at birth, one's early experiences will then determine the subsequent two of Barlow's (2000) vulnerabilities; a generalized psychological tendency based on one's developing sense of control, and a more specific trait where anxiety is learned for a particular situation (in this case, for music performance). Life experience then continues to shape one's relationship with anxiety. The age of the individual is therefore a factor, and MPA seems to peak in adolescence (Brugués, 2011; Kenny, 2011). Increased age and subsequently, years of training and performing, can play a role in decreasing MPA (Sadler & Miller, 2010), therefore the age at which a student starts musical training could be an additional factor. A 2018 study found that musicians who started at or before the age of 7 reported lower levels of MPA as adolescents and young adults (*N* = 646; 209 adolescents, 437 young adults; [Zarza-Alzugaray et al.]), supporting advocacy for an early start in music education. This said, it is worth noting that these age-related effects could partially be explained by the potential for MPA to progressively deter individuals from pursuing music further (Sadler & Miller, 2010).

Personality Traits

More individual, internal factors that influence a student's risk for MPA include the performer's personality (e.g., introversion versus extroversion), trait anxiety, level of self-efficacy, and musical ability, training, and experience (both perceived and actual) (Kenny, 2011; LeBlanc, 1994). These elements of students' personalities are in part socially bound, and so music educators have some influence in these facets of a student's risk for MPA. Beyond these elements, some studies suggest that musicians are inherently more anxious than the general population (Kenny, 2011; Nedelcut et al., 2018), and generalized anxiety disorder has been shown to be a strong predictor of MPA (Wiedemann et al., 2022). In a 2019 study of 10,776 Swedish twins, Wesseldijk et al. found that overall, musicians at all musical achievement levels had a somewhat increased risk of self-reported mental health problems, suggesting underlying environmental or genetic factors influencing musicianship and mental health struggles. Furthermore, there is a comorbidity with MPA and other forms of anxiety and personality disorders, such as generalized anxiety disorder, social anxiety disorder, social phobia, depression, and obsessive-compulsive disorder (Dobos et al., 2019; Kenny, 2011; Shafran & Mansell, 2001; Sickert et al., 2022; Wiedemann et al., 2022). Educators should not attempt to diagnose or modify treatment of students by perceived mental disorders, rather, this information should be considered in order to form partnerships with psychological professionals in possible interventions. As an important additional note, despite comorbidities with MPA and anxiety disorders and some overlap of traits such as a fear of evaluation (e.g., social anxiety disorder and MPA), MPA is a separate phenomenon, and educators should not assume that students experiencing MPA have anxiety disorders, and vice versa (Herman & Clark, 2023). In doing so, this risks abnormalizing what is a natural phenomenon in musical performance and learning (Gómez-López & Sánchez-Cabrero, 2023).

Musical study involves constant learning, practice, and evaluation, so it follows that perfectionism is very common among musicians in traditional learning settings (Dobos et al., 2019) and has been found to be positively correlated with MPA (McNeil et al., 2022; Sarbescu & Dorgo, 2014). While having high personal standards can be a strong motivator, perfectionism is seen to have a paradoxical effect. As true perfection is an unattainable concept, perfectionists fail frequently, whether this be actual or perceived failure. Setting unrealistically high standards, paired with a profound fear of failure, negatively impacts the performance and forms a self-fulfilling prophecy that could become increasingly problematic (Patston & Osborne, 2016). In Patston and Osborne's (2016) study on the developmental trajectory of MPA and perfectionism in 10- to 17-year-olds, MPA and perfectionism increased with years of experience, suggesting that this age group is a critical point of MPA development. In this way, perfectionism paves the path to psychopathology. As perfectionists base their self-worth with their performance quality, consistently failing to meet standards (self-imposed or otherwise) tends to negatively impact self-esteem (Shafran & Mansell, 2001). These musicians are then forming schemas with cognitive distortions (e.g., catastrophizing, polarized thinking) driven by and further cementing lower self-worth (Osborne & Franklin, 2002). Low self-worth can then be tied to shame, chronic anxiety, and depression (Kenny, 2011). In surveying 295 participants with the Rosenberg Self Esteem Scale, the Kenny Music Performance Anxiety Inventory, and the Beck Depression Inventory, Sickert et al. (2022) found that students had lower self-esteem and higher MPA than employed musicians and amateurs, and that low self-esteem and MPA could predict depression, indicating a higher risk for negative emotions and MPA for the student population.

Negative emotionality and/or emotional instability can indicate neuroticism, which can be another risk factor for MPA (Miranda, 2020). This was seen in a longitudinal study of undergraduate music performance majors (*N* = 37) over the course of one school year. Using the self-report measures of the Positive and Negative Affect Schedule (Watson et al., 1988) before musical performance and a validated Multidimensional Personality Scale (Tellegen & Waller, 2008), negative emotional temperament was shown to have a strong association with performance anxiety (Sadler & Miller, 2010). This was confirmed in a 2023 network analysis of MPA, negative affect, self-consciousness and mindfulness among 151 musicians, where negative emotions were the most consistent variable associated with MPA (Lecuona et al.)

These individual factors combine elements of nature and nurture, and exhibit the interconnectedness of how the environment shapes genetics, and vice versa. Music learning requires a significant amount of specialized training and solitary practice, as well as social experiences in lessons, classes, and performances. Therefore, a young musician's view of themselves will be shaped by their family dynamics, their school music instruction, their private instructors, and their early performance experiences (Kenny, 2011). Music teachers have influence on only some of these elements, and so MPA research emphasizes the need for teachers to make music learning a positive force for their students through careful construction of the learning environment and the tasks and contexts in which teachers ask their students to perform (Sternbach, 2008).

Environment: Performance Anxiety and Socioeconomic Status

While certain commonalities exist among educational environments, my study site, Terminus International School (TIS)[3], presented some unique environmental aspects for this study, warranting a specific discussion of the environment in relation to MPA. Most of the students attending TIS, a private school, come from high-socioeconomic backgrounds. Socioeconomic status (SES) is a key feature of the environment that a student grows up in, and a person's self-concept, self-esteem, and self-efficacy (in both one's ability to perform music and ability to cope with an anxiety-inducing event) is highly dependent on their familial and learning environments (Kenny, 2011). A family's SES is likely to impact both parental pressure and the support that parents can provide. Parental pressure has been shown to increase students' test anxiety (Chen, 2012), with students from low-SES families perceiving more parental pressure to succeed, so it is possible that students from low-SES families may experience more MPA. This said, with the potential need to purchase an instrument, lessons, and the opportunities to play outside of school, SES can be a determining factor for students' musical opportunities. Therefore, access to music education opportunities due to SES could have a systemic effect. A child's initial decision to study music often from their parents (Corrigall & Schellenberg, 2015; Upitis et al., 2017), and in Ryan et al.'s 2023 pilot study of 62 piano students aged 11 to 17, it was found that students whose parents had studied music reported higher levels of MPA than those whose parents did not study music.

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[3] The name of the school has been pseudonymized.

Socioeconomic status has also been shown to have an effect on the development of perfectionism in children, which is a contributing factor toward MPA (McNeil et al., 2022; Sarbescu & Dorgo, 2014). Jackson (2009) found that low-SES individuals exhibited increased levels of perfectionism with age, while high-SES individuals exhibited decreased levels of perfectionism with age. Hong et al. (2017) found that students from a low-SES background developed perfectionism more often. It is worth noting that the bulk of existing literature surrounding SES and anxiety is focused on academic achievement, not on the performing arts. Further, Jeong and Ryan (2022) found in their systematic review of childhood perfectionism in music that most studies on perfectionism rely on scales or questionnaires alone. This further supports the approach of my mixed methods study (and my use of interviews) to gather a wider range and variety of data to form a more complete picture of the phenomenon of MPA in young adolescents within the environment of a private school.

Task and Contextual Factors

One of the challenges of live music performance is that each instance is different in some way. Each situation can elicit a different stress response from an individual due to what they must perform and the circumstances of the performance. The task of performing music requires a certain level of skill in a range of modalities encompassing physical, mental, and emotional coordination, and varies wildly from the style of music to be performed, its level of difficulty, and whether the music must be performed from memory, for instance. Genre may play a role, as performers of western classical music report higher MPA than performers in more contemporary genres such as jazz (Nicholson et al., 2015; Papageorgi, 2011). In Perdomo-Guevara's 2014 online survey of 625 participants, western-classical performers reported significantly fewer positive emotions, and more negative emotions than those who identified as non-classical musicians, and classical musicians were more self-oriented than their more people-oriented nonclassical counterparts. However, MPA has been identified in a wide range of genres as researchers have widened their scope (Ryan, 2015), so the differences seen in such studies could be due more so to the typical performance situations associated with a genre. This said, studies like Perdomo-Guevara's indicate that MPA is not solely an individual condition, rather one that is influenced by a performer's musical environment (2014).

The difficulty of the music to be performed is another task-related factor, as one's anxiety level is likely to follow an increase in perceived difficulty level. However, this can potentially be mitigated by the level of preparation, as well as the increased age and level of training that corresponds with more difficult literature (Valentine, 2002). Teachers can help to set their students up for success by providing literature that is at an appropriate level, modifying the musical demands of a piece as needed, and instructing students in a way that will promote adequate preparation (LeBlanc, 1994).

Being tasked to perform music from memory can raise the difficulty level, and therefore raise the potential for performance anxiety (Ginsborg, 2019). MPA may also be a cause of memory lapses for students (Kenny, 2011), creating both more anxiety in the moment and a negative performance experience to dwell upon afterward (Jones et al., 2014). In a 2010 content analysis of 185 articles and book chapters on memorization pedagogy between 1872 and 2006, Mishra found that 36 wrote about memorization producing higher anxiety, and 26 focused on anxiety being a reason why memorization fails in performance (Mishra, 2010). This acknowledgement of the link between memorization demands and anxiety indicates that music educators should prepare students well in advance of memorized performances and deliberately teach purposeful practice and memorization techniques. This said, in a 2021 survey of 62 adolescent piano students, despite most reporting that their teachers encourage them to perform, less than half reported that their teachers discuss memorization strategies or ways to manage MPA (Ryan et al., 2021). As memorization increases the task difficulty, this element is worth music educators' attention and preparation.

The context of a performance can also influence the experience of MPA, such as the magnitude of and familiarity with the performing environment, the size of, proximity to, and status relation with the audience, if it is a solo versus a group performance, if one is making a recording of the performance, or if the performance is part of an evaluation (LeBlanc, 1994; Wilson & Roland, 2002). The performer's perception of the audience is key, and it has been found that students may experience less MPA when they are less aware of the presence of an audience (Gómez-Sirvent et al., 2024). Solo performances have been linked to higher MPA than ensemble performances, and to a degree, as the number of co-performers increase, MPA decreases dramatically (Brugués, 2011; Sarbescu & Dorgo, 2014; Wilson & Roland, 2002).

A context where many students report their highest anxiety is in auditions. An audition compounds the occupational stress of needing a successful audition to proceed in a goal with the factor of it being a solo performance (Kenny, 2011). Additionally, this "audience" is not just perceived as scrutinizing by the performer, but is specifically tasked to judge the performance. This combination of the fear of evaluation and social inferiority between performer and adjudicator proves to be very challenging for many musicians, regardless of their experience level (Wilson & Roland, 2002). In a 1994 study, musicians ($N = 64$) showed significant increases in heart rate and state anxiety as assessed by the State-Trait Anxiety Inventory (Spielberger et al., 1983) with a performance in front of a jury versus without in a pretest posttest control group design (Brotons). These physiological and psychological responses were not affected differently whether the performer knew the adjudicator or not (Brotons, 1994). In an evaluative performance such as an audition, the evaluation of students make of their own abilities prior to the performance is key, as students who view such a performance as a challenge (as opposed to a threat) are more likely to have less cognitive anxiety and higher self-confidence, which are both protective measures against MPA (Osborne & McPherson, 2019).

Each contributing factor of MPA-the individual, the task, and the context-all interact with each other. For example, an individual with a social phobia may have enhanced levels of anxiety in a solo performance than their non-socially phobic peers (Cox & Kenardy, 1993). Existing research has worked to separate all of these elements to be better able to pinpoint interactions, and future research should continue this aim to strive for better diagnosis and treatment. Music teachers can work to optimize the elements within their control (e.g., setting up the best environment for individual growth, and structuring the musical tasks and contexts), and help students to work through the effects of MPA.

Effects of Music Performance Anxiety

Effects on Performance

Pushing past the point of optimal arousal to anxiety, MPA before and during a performance degrades the performance quality-tangibly in the form of decreased musicality, or as a negative experience for the performer (Tan et al., 2018). Eysenck and Calvo explained this depreciating effect with their processing efficiency theory, where anxiety-driven thoughts distract a performer from the task-specific thoughts a performer would otherwise engage in. These thoughts take the performer from the task to unproductive metacognitive thoughts, distracting and siphoning attention and energy from a performer’s working memory during performance (Eysenck & Calvo, 1992). This reduced working memory capacity is particularly detrimental when performing from memory, or playing less familiar or more complex repertoire. While this consequence of MPA would certainly be expected in beginning musicians who are just learning the task skills specific to their instrument, this theory does not explain all the experiences of trained musicians reporting MPA.

Baumeister's (1984) explicit monitoring theory explains MPA in performances that are very well prepared. With more years of training, and when a piece is well learned, the performer is rarely consciously thinking of all the mechanisms that go into playing (Tan et al., 2018). Therefore, it could follow that compared to a student who is just learning a piece, that student later performing that piece relies on their working memory for more expressive elements rather than technical ones, as their technique is more refined and engrained. Aside from any performance cues where a musician may choose to think about a specific action, most of the actions of performing are practiced and refined, even to the point of automaticity (Ginsborg & Chaffin, 2011). Explicit monitoring theory (Baumeister, 1984) posits that performance quality will decline when these well-trained actions are consciously monitored as it inhibits flow (Csikszentmihalyi, 1990), a feeling of complete immersion and enjoyment that has been found to have a strong negative relationship with MPA (Cohen & Bodner, 2019; Spahn et al., 2021). Under stress, many performers fall victim to doubting their abilities and instead hyper-focus on technical elements to regain control, only to find that what once was automatic is now faltering, particularly for motor tasks like playing music (Tan et al., 2018).

Effects on the Performer

With so many contributing components influencing MPA, there are a plethora of manifestations across individual musicians, and each individual musical performance (Kenny, 2011). These manifestations can generally be identified as physical, mental, or emotional, with many experiences bringing a mixture of two or more of these components (Tan et al., 2018). Physical effects of MPA are indicative of what is commonly termed the “fight or flight” response (Cannon, 1915, p. 211), or as Bracha (2004) expanded to "freeze, flight, fight, fright, or faint" (p. 679), our fear responses to a perceived threat. Chopin’s quote, referenced earlier, reflects these physical traits, as he admitted feeling “choked” and “paralysed” (Kenny, 2011, p. 1). These traits are a stress response of the sympathetic nervous system and include: increased heart rate, increased blood pressure, sweating, shakes or tremors, dry mouth, and muscle tension (McLeod et al., 1986; Tan et al., 2018). These effects directly interfere with the physical demands of performing, further distressing the musician. On a longer term, these physical effects could manifest, taking the form of somatic anxiety, with abdominal pain, fatigue, dizziness, insomnia, and headache (Gelenberg, 2000). These manifestations, and working under these physical conditions, can lead to poor posture and overuse injuries, causing a domino effect for the performer as this affects their musical practice (Kenny, 2011).

MPA also has profound mental effects, as the performer’s thoughts are redirected from potentially task-oriented thoughts to fretful ones (Eysenck & Calvo, 1992). This cognitive anxiety affects focus, as performers may blank out and find it much harder to concentrate on the task. Coupled with self-deprecating thoughts of doubt and images of failure, the performer’s internal discourse reflects and begins to cement conscious and subconscious beliefs.

As a result, MPA manifestations have a third tier in the form of emotional effects. Beyond worry, anxiety sufferers can experience feelings of shame, hopelessness, and irritability, among others (Kenny, 2011). These manifestations present and interact differently based on the individual, the task, and the context. For example, Abel and Larkin (1990) found that student musicians ($N = 22$) exhibited increased HR and blood pressure before a jury performance, along with higher self-reported anxiety. While the sample size was small, gender differences in MPA experiences were noted as males seemed to confront more somatic effects of anxiety, with females experiencing more cognitive and affective aspects of anxiety. The males in the study had a more physical response to MPA with higher systolic blood pressure increases in anticipation of the performance, whereas the females reported higher mental and emotional anxiety. The individuals who exhibited greater physical manifestations (e.g., higher HR increases), reported less confidence and more anxiety. With a varied MPA experience across individuals, there is as much variation in how students will react to MPA.

Student Responses to Music Performance Anxiety Manifestations

Stemming from these MPA manifestations of physical experiences, thoughts, and feelings, each performer forms schemas, and then engages in coping actions, revealing behavioral effects (Kenny, 2011). Behaviorally, a performer’s choice of action can generally be broken down into avoidance or overcompensating, which is reflected in one’s avoidance or approach motivation (Elliot, 2006). Avoidance can be seen directly in avoiding public performances or not taking audition opportunities, but also in self-sabotaging behaviors while preparing for a performance: for instance, practicing less, not taking care of oneself or one’s instrument, or not doing the work required for an upcoming performance. Overcompensating can take the form of over practicing, which can cause physical decline affecting performance technique, as well as mental and emotional fatigue (Kenny, 2011).

According to Young’s (1990) schema theory, a third option for performers is to take no action, surrendering agency and proceeding as if their feared outcomes are inevitable. Through repeated avoidance, overcompensating, or inaction, young performers form early maladaptive schemas (EMSs). EMSs are "extremely stable and enduring themes that develop during childhood and are elaborated upon throughout an individual's lifetime. These schemas serve as templates for the processing of later experience." (Young, 1990, p. 9). In forming these EMSs, negative performance experiences serve to fuel future negative experiences in the future. Students can then continue to develop and engage in these maladaptive coping mechanisms, which tends to further reinforce their negative self-beliefs and subsequent actions. For this reason, it is crucial that researchers and educators focus on more than just presence of the "symptoms" of MPA, but on students' responses to these effects (Herman & Clark, 2023), particularly as students' fulfillment and enjoyment of music will determine their desire to study music.

Effects of Music Performance Anxiety on Students' Continuation in Musical Study

Music learning in ensembles involves live performance and sharing music with others. Unfortunately, many burgeoning musicians find that the presence of any sort of audience, even if it is just their supportive teacher in the less formal setting of the classroom, can have an adverse effect on their performance. K-12 students tend to lack both protective barriers of age and experience (Fernholz et al., 2019; LeBlanc et al., 1997; Sadler & Miller, 2010; Steptoe & Fidler, 1987) and are in a developmental stage where they are learning about music while simultaneously learning who they are, and what their relationship is to music. An anxiety-affected musical experience, and the resultant negative effects on the student as a performer can then have a further effect on students' participation in music ensembles. Therefore, MPA can be particularly devastating in these formative years.

While very young children rarely exhibit MPA, proclivities to MPA can be seen as children develop cognitive and meta-cognitive capacity and self-reflection, gaining perspective including feelings of shame (Kenny & Osborne, 2006). As early as toward the end of elementary school, many have already developed their self-concept of musical ability and labeled themselves as musical or non-musical (McPherson et al., 2012). This identification is likely to influence a student's value for music. McPherson and Hendricks' (2010) study of U.S. schoolchildren at the secondary level found that students (*N* = 3,037) "reported lower competence beliefs and values for music and art than for all other subjects" (p. 206).

Bloom (1976) identified that initially, students show few differences in their academic self-concept. However, by around the age of nine, students exhibit differences in self-concept that are reflective of their achievement levels. Importantly, the differences in students' self-concepts show more variation and are solidified with added years in education. Thus, children's self-efficacy toward music, particularly in relation to the perceived musical ability of other children would have "important effects on... choice of education specialization, and even on the avocational use of a school subject or area of learning" (Bloom, 1976, p. 149). The self-efficacy theory (Bandura, 1977) also supports that early identifications of self-efficacy in a child's self-concept influence a child's motivation for music learning. Bandura defined self-efficacy as, "People's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances" (1986, p. 391), and identified four sources of this self-efficacy: mastery (i.e., performance) experiences, vicarious experiences, verbal/social persuasion, and physiological and affective states (Bandura, 1997). Experiences of MPA can affect all four sources, particularly those of mastery experiences and psychological and affective states, and thus can negatively affect students' self-efficacy and future musical expectations (Wang & Yang, 2024). In Wang and Yang's 2024 study of 340 high school students majoring in music education and performance in China, they found that MPA had a negative impact on self-efficacy and students' career expectations, but that self-efficacy served as a moderator between MPA and students' beliefs about the future.

If, in part due to MPA, a student does not have the self-efficacy to believe that they are competent in music, it follows that their value for music will decrease, and they will lose their motivation to learn music (Sichivitsa, 2004). With lower motivation, an early low self-efficacy towards musicianship could solidify and become a self-fulfilling prophecy, making future engagement with music-making much more difficult. Following this, Covington's (1984) self-worth theory asserts that students will attempt to preserve a positive self-image and will likely grow averse to risking failure as a result. Therefore, any negative, anxiety-inducing experiences with performing can be debilitating and potentially drive a student to quit music study. Given the lifelong benefits that musical activity can provide (Elvers et al., 2017; Guhn et al., 2019; Welch et al., 2014; Welch et al., 2020), music teachers should be aware of interventions available to help students to cope with the effects, or even, to prevent the onset of MPA altogether.

Coping Strategies and Interventions

Performers have struggled with MPA long before it was termed and studied as such, and so have come up with many ways to try to cope, to varying degrees of effectiveness. Indeed, as there are myriad factors affecting MPA, from what experiences shape each individual, sources of their stress, and the manifestations resulting from that stress, approaches attempting to prevent MPA have as many nuances. Given the interconnectedness of thoughts, feelings, and behaviors in reaction to one's environment, small changes in one aspect can have profound effects on another, resulting in positive changes in performance.

Personal Interventions

Performers have a good deal of agency in setting themselves up to have their most optimal performance. For example, general lifestyle changes, such as physical exercise and developing interests outside of music can prove beneficial for performers (Valentine, 2002). Performers can consciously or subconsciously self soothe, engage in pre-performance rituals, and perhaps even subscribe to superstitious methods (Brooks et al., 2016). Some performers have found improvements in utilizing techniques such as Feldenkrais, yoga, Alexander technique, progressive muscle relaxation, and meditation as forms of training the body's response to stress (Chang et al., 2003; Davies, 2020; Valentine, 2002). With regular practice, these methods can reduce tension in the moment, and eventually could restore the student to a more relaxed mental and physical state in general.

This said, complete relaxation may be unrealistic, and even counterproductive in striving for peak performance (Herman & Clark, 2023), as some level arousal is needed for optimal performance (Yerkes & Dodson, 1908). Therefore, despite the general benefits for one's well-being, these experiences are more effective when they are tailored for both general life as well as music performance specifically, and improvements may not always carry over to improved performance, particularly in higher stress situations (Valentine, 2004; Valentine et al., 1995). It is also worth noting that intentionally changing one's state can create internal resistance and make anxiety worse (Herman & Clark, 2023), so it can be more effective to use relaxation techniques in conjuncture with additional support. In searching for additional support, students also have a choice to seek help from an outside source.

Outside Interventions

Some performers are able to self-sufficiently manage their MPA, but sadly, students may struggle with the phenomenon silently. In order for a student to pursue outside help, they need to first acknowledge that they have MPA, be aware that help is available, and feel comfortable and supported in reaching out for that help. Therefore, it is vital that music teachers create an environment where MPA is openly talked about so that there is no element of shame in admitting anxiety (MacAfee & Comeau, 2022; Ryan, 2015). While it is outside of a teacher's scope of practice to prescribe or to provide therapy, a music teacher can be the first line of defense in identifying if a student may be having an issue with MPA, particularly as music teachers see their students in a wide range of performance experiences. Although teachers cannot enact certain outside interventions, teachers should have some knowledge of these treatment options in order to communicate with students' guardians and refer out, if necessary.

Many interventions are available to cope with MPA, both in the moment and in longer-term preventative measures. Most interventions seek to manage MPA through alleviating symptoms (Herman & Clark, 2023). For example, pharmacologically, a range of beta-adrenaline blockers can be used to artificially reduce the level of arousal and the physical symptoms of that arousal (Tan et al., 2018). Under proper medical supervision, and a good fit between the individual and the prescription, some performers have found beta-blockers useful, and side effects are generally mild. However, beta-blockers only directly target the physical manifestations associated with anxiety, and so musicians should employ other methods, and also strive to target the source of their anxiety (West, 2004). Teachers cannot ethically recommend this as an option, but should be aware of the intervention (Engelke & Ewell, 2011).

A combination of behavioral techniques and cognitive strategies has been shown to be most effective in reducing MPA (Zhukov, 2019). Behavioral techniques that increase mindfulness have been shown to reduce MPA and network analysis has shown that mindfulness was inversely associated with MPA (Lecuona et al., 2023). Mindfulness could address MPA directly or indirectly through affecting self-consciousness or negative emotions. However, these techniques need to be practiced over a long term to have significant effect (Lin et al., 2008). Cognitive behavioral therapy (CBT) has proven to be a powerful tool in identifying anxiety triggers, reducing performance anxiety and ultimately improving quality of life for musicians (Niering et al., 2023). CBT can address a multitude of issues, such as teaching clients to positively reframe state anxiety so it is less debilitating and more empowering, and targeting the roots of one's trait anxiety and modifying negative habitual patterns to more constructive ones (Burin & Osório, 2016; Kendrick et al., 1982; Tan et al., 2018). In working on both state anxiety through visualization (perhaps utilizing eye movement desensitization and reprocessing), CBT can help a student to establish a connection with the performing environment and give the student mental practice of being in the "A-State" of anxiety, or the "optimal level of arousal" (Brooker, 2018, p. 109). In a 2015 study examining the effect of group CBT on MPA, adolescents (*N* = 62) reported significant reductions in MPA, even at a 2-month follow up (Braden et al.), showing the promise of CBT for adolescent musicians. Therefore, music teachers should maintain rapport with their school psychologist in case their students could benefit from additional outside support.

Teacher-Guided Interventions

Much of the existing MPA research is on professionals or collegiate music students, at which point, their anxiety is a learned behavior, and the focus is to manage the condition (Blair & van der Sluis, 2022; Clearman, 2020; Gomez-López & Sánchez-Cabrero, 2023). This said, as in many conditions, the best cure is prevention. Preventing MPA requires bridging the gap between research knowledge and practical teaching applications (MacAfee & Comeau, 2022). Therefore, there has been an increased interest in researching MPA in younger populations, with studies focused on early interventions, taking an educational approach. As individuals who have access to and rapport with developing musicians, music teachers have a unique and vital role to play in mitigating the development of MPA, and in potentially identifying students who may be at-risk (Gómez-López & Sánchez-Cabrero, 2024). Here, music educators can take a three-pronged approach, as they have direct influence in the pedagogy of their instruction and the pre-performance conditions at their school, and frequently see their students in a variety of musical contexts so as to potentially identify MPA. While a 2023 systematic review of teachers' approaches to MPA management reported that teachers felt that they needed additional training in MPA management, and these calls should not be ignored, many strategies can be worked into teachers' pedagogy (Mazzarolo et al.).

Pedagogical Interventions

The initial consideration that teachers can make in aiming to prevent MPA is their learning climate. Teachers are responsible for creating and continually fostering a supportive environment that encourages growth, not only accepting but welcoming the mistakes that are essential on the path of musical learning. Lessons and rehearsals can be planned and structured in a way that presents challenges that will provide an optimal amount of arousal to students (Yerkes-Dodson, 1908), and ensure that students are well prepared for performances (LeBlanc, 1994). Beyond students' musical development, teachers should also be monitoring students' intra- and interpersonal development within the music classroom, as positive relationships help to create a collaborative learning environment and lower experiences of musical vulnerability (MacGregor, 2022). Perhaps more so than in other subjects, music classes can be very exposing for students as music classes tend to be primarily public-performance-based. Therefore, it is important for music educators to make every effort to avoid negative performance experiences, not only in concerts, but in lessons and rehearsals, as such vulnerable experiences could increase students' vulnerability to MPA (Urruzola & Bernaras, 2020). Rather, music educators should strive to make every performance experience, no matter how small, a positive one, so that students find joy in performing as they develop their musicianship.

Pedagogically, proper preparation can provide the most effective prevention for MPA. If students are taught effective practice methods, it is possible that this can reduce the task load aspect of anxiety (Valentine, 2002). In learning a piece more efficiently, the difficulty of the task of performing the piece is reduced, thereby lessening MPA. Practicing solo is a self-regulated activity, and left to their own devices, students may have vague or nonexistent practice goals, which can make it difficult to strategize and less likely that a student will feel successful (Oare, 2012). Therefore, deliberately teaching practice strategies can empower students. If memorization is required, such as for choral performances or playing scales for instrumental auditions, educators should also teach productive memorization methods such as chunking and utilization of performance cues (Gerling & Dos Santos, 2017), lest students default to inefficient brute force methods such as incessant repetition.

Beyond teaching the musical aspects of practicing, educators also teach their students how to think and respond in practice and performance through guided constructive criticism. Sternbach (2008) suggests asking the following questions of the student: "What just went right, what might you do differently next time, and what would you like from me?" (p. 45). Questions such as these can spur students to reflect upon their learning and how to apply their learnings, while simultaneously developing a reflexive practice where they apply the implications of their learnings to a broader context. Teachers can also exhibit this reflectivity and reflexivity in post-performance assessment, whether on a micro-scale after a passage in lessons or rehearsals or on a larger scale of post-concert assessment through dialogic teaching and modeling (Meissner, 2021). Regularly engaging in constructive self-assessment can modify a student's self-perceptions surrounding performance and train the student to think more in a growth mindset (Dweck, 2006), where mistakes are a necessary, even welcomed part of learning, and success is acknowledged and praised (McPherson et al., 2022).

Overall, encouraging mastery goals as opposed to performance goals can help discourage comparison to other students, and teach musicians to focus on their process over the product, developing a healthier and more sustainable source of internal motivation in learning (Tan & Sin, 2020). One curriculum-driven way to work on this is to include improvisation, shifting the focus from perfectionistic right or wrong to a more free and enjoyable focus on creative expression (Allen, 2013). Beyond musical preparation, training performers in mental skills such as goal setting, concentration work, and mental rehearsal can positively shape the performer's experience from the practice room to the concert stage. As skills, these methods are most successful with regular practice, and can aid the performer's reflections and thinking on their playing even when they are not actively engaged in music making (Connolly & Williamon, 2004). Success breeds success, and improving the actual experience is likely to improve the performer's self-talk, leading to an upward spiral.

Drawing on Bandura's (1977) self-efficacy theory, teachers can make use of students' own beliefs to enhance their performances and learning experiences. Greater self-efficacy has been shown to have an inverse relationship with MPA (Bersh, 2022; Dempsey & Comeau, 2019; González et al., 2018; Robson & Kenny, 2017; Wang & Yang, 2024; Zelenak, 2019), and so teachers should be cognizant of this and actively work to help build their students' self-efficacy through increasing mastery and vicarious experiences in the classroom (Bandura, 1977).

Verbal/social persuasion has been found to be the strongest predictor for achievement in musical performance (Zelenak, 2019), so teachers should be sure to provide ample verbal encouragement. This can be done through providing constructive responses throughout the learning process, as immediate feedback post-performance and ongoing feedback that students receive influence their music experiences (LeBlanc, 1994; McPherson et al., 2022). Petrovich (2004) suggested that music teachers should praise their students' efforts, not only their successes. Teachers may have to provide a counter-narrative to students' unproductive judgmental thinking and cultivate a practice of esteem-building self-affirmation.

Focusing on the context aspect of anxiety, exposure to more performance opportunities, particularly positive and supportive ones, can build confidence and improve a student's reaction to the stress of performing. With careful attention, teachers can optimize their students' performing environment within the school setting by building a comfortable environment with minimal distractions, and prepare students for a variety of environments that they might encounter outside of the classroom (LeBlanc, 1994). Teachers can create frequent and low stress performing opportunities and encourage their students to engage in more performances and auditions so that students gain experience and self-assurance in these areas (Kenny, 2011). This will provide increased mastery experiences, which have been shown to have the strongest relationship to building self-efficacy (Zelenak, 2019). Furthermore, as students become more experienced performers, their MPA is likely to decrease (Candia et al., 2023; Sadler & Miller, 2010; Sarbescu & Dorgo, 2014).

Much research has been done on simulating the performance situation through practicing in the performance space prior to the concert or having a mock audition, providing credence to the conventional wisdom of conducting dress rehearsals (LeBlanc, 1994; McKinney, 2008).

More recently, researchers have simulated performance through the use of virtual audiences and judges, finding that simulated audiences stimulate similar stress responses in performers, making them a useful training tool (Williamon et al., 2014). In studies with virtual audiences, it has been found that using virtual practice as exposure therapy can both sharpen performance skills and reduce MPA (Aufegger et al., 2017; Bissonnette et al., 2015). Virtual reality has also been used to determine what aspects of the performance environment may drive anxiety. Gómez-Sirvent et al. (2024) studied 61 conservatory students in a virtual environment to manipulate distance from a virtual audience and the ambient lighting, and to track differences in saccadic eye movements and student questionnaires. The authors found that students were more comfortable performing when the light over the audience was darker and when they were further from the audience; in sum, when they were less aware of the presence of the audience (Gómez-Sirvent et al., 2024). It is worth noting that this area of study is fairly new and virtual reality can be a logistical challenge for experiments, so many of the studies have small sample sizes. For example, the 2014 study used eleven violin students, and only seven of whom performed for a live judging panel as well.

While virtual reality is likely too difficult a measure to enact for many music educators, educators can apply the findings of such studies by structuring lessons and rehearsals so that students perform for each other more frequently, and by influencing students' perceptions of performing environments. As previous research has found that MPA has an inverse relationship with the number of co-performers (Brugués, 2011; Wilson & Roland, 2002), a teacher could start by having larger groups, such as sections, perform for each other, and then structure their lessons to gradually reduce the number of co-performers as the students become more comfortable. Similarly, teachers could acclimate students to a concert or audition experience by starting with a more comfortable performance environment, where students are further from their audience, and gradually decrease that distance as students grow more confident. While enacting this preventative pedagogy, teachers should convey a positive attitude regarding the management of MPA, as this encourages students to seek help (Tahirbegi, 2022) and helps to normalize MPA.

Pre-Performance Interventions

Beyond preparation, teachers also have a role in shaping the immediate pre-performance conditions in school performances. On the day of a school concert, Ryan (2005) found that children in grades three through seven ($N = 173$) exhibited significantly higher state anxiety as measured by the state form of the State-Trait Anxiety Inventory for Children (Spielberger et al., 1973) than on a regular school day, with no differences found for the type of music class. Knowing this, teachers have a responsibility to help students to manage these emotions and set their students up for a positive experience. In a 2020 study, 222 students aged 9- to 12-years-old went through a guided imagery of their most recent concert memory, then reporting their emotions, their MPA utility beliefs, and their MPA regulation beliefs. 60% of participants reported tension and lack of confidence in their pre-performance emotions, with 45% reporting feeling fear. Furthermore, 55% of the participants had high or moderate MPA profiles, 31% believed that MPA had a negative impact on their performance, and 18% felt helpless in coping with MPA (Kaleńska-Rodzaj). From managing the performance logistics, to leading students through a proper physical and mental warm up, to walking on the stage, and finally exuding calm confidence in conducting, teachers can help to maximize the performance experience (Paul, 2020). Breathing and visualization exercises have been shown to be particularly useful in reducing anxiety (McKinney, 2008; Sternbach, 2008), especially the more that these methods have been taught and practiced, and so music teachers should incorporate such exercises into rehearsals leading all the way up to performance.

Aside from breathing and visualization exercises, some studies reveal potential for some other less time intensive possibilities (Tang & Ryan, 2020; van Zyl, 2020). van Zyl's 2020 study investigated a new application for virtual reality in the treatment of MPA through using virtual reality as a form of relaxation pre-performance, as opposed to using virtual reality to simulate performance environments. Participants in the treatment group ($N = 6$) experienced a five-minute virtual relaxation session prior to performing. In qualitative data gathered from a survey after performing, participants experienced a significant decrease in self-reported anxiety. Quantitative heart rate data showed a decrease in physical manifestations related to MPA, as participants exhibited less elevation in heart rate. A virtual relaxation experience is much more achievable for music teachers than a virtual performance, and there are several free or affordable websites and applications for this use. Tang and Ryan (2020) built upon previous research involving expressive writing for test anxiety based on the hypothesis that writing gives one an outlet to release fears prior to the stressful event. In their sample of 35 piano students, performance errors decreased by 50% after the ten-minute writing activity. However, only participants who self-identified as high self-talkers (those with a negative running inner monologue while playing) found statistically significant benefits in decreased pulse rate, self-reported satisfaction, or self-reported performance anxiety. That said, expressive writing is a simple intervention that teachers could enact that could help some students.

With the relative ease of implementation of these interventions, music teachers could use these interventions and empower students to self-manage their MPA. However, in these studies, and much of the current literature, the size and composition of the samples cast some doubt regarding the transferability of these findings to other music education settings, and future study is needed to include the populations of students that teachers work with. Additionally, many of the studies that have been conducted have been on professional musicians, graduate students, and undergraduate students (Blair & van der Sluis, 2022; Gomez-López & Sánchez-Cabrero, 2023). As increased age and experience tend to decrease the prevalence of MPA (Candia et al., 2023; Sadler & Miller, 2010; Sarbescu & Dorgo, 2014), further studies are needed to investigate the utility of application of such interventions in younger students in order to inform pedagogy.

Identification of Potential Music Performance Anxiety

In addition to employing pedagogical efforts to mitigate MPA, music teachers should be on the lookout for developing signs of MPA to inform their future teaching, and in case outside prevention measures are needed. MPA has been shown to be predicted in conservatory students by health and psychological signs, such as depression, a fear of negative evaluation, social avoidance, poor achievement motivation, and the use of substances (which are sometimes used to alleviate MPA) (Lupiáñez, 2022), and so these could be indicators for younger students. Recognizing students and their individual needs is vital to help students as they navigate the stressors of music learning.

As a potential assistance for MPA identification, researchers have developed promising surveys, such as the 15-item self-report measure Music Performance Anxiety Inventory for Adolescents (MPAI-A), the survey I used for my study, which assesses somatic, cognitive, and behavioral predictors of musical performance anxiety in young musicians from 12 to 19 years of age (Osborne & Kenny, 2005; Osborne et al., 2005 [validated the scale for ages 11-13]). In Osborne & Kenny's (2005) use of this scale in their study of 381 student musicians, it is worth noting that there was a strong situational effect in the students' report of their subjective experience of anxiety due to the time in the school year and particularly due to their performance demands. Situational factors affect the severity of students' self-reports of MPA, serving as a reminder that students are under a variety of stressors inside and outside of the music classroom. Teachers can be mindful of these stressors, and help ensure that they are not contributing to students' situational stress by cultivating a relaxed and balanced environment (Sternbach, 2008). While existing research has increased understanding of MPA, how and why MPA develops is still unclear, and so more research is needed to uncover the etiology of this affliction.

Implications for My Research

Existing research has helped to identify the multitude of variables in studying MPA while also uncovering more queries to pursue. As we progress, continually refining the definitions for the range of terms applied to this field of study (e.g., phobia, anxiety, performance anxiety, and specifically music performance anxiety) will be instrumental in pinpointing how to identify, reduce, and perhaps even prevent MPA. Research in other fields of performance anxiety such as sports and public speaking will continue to be informative as many parallels can be drawn. Essentially, "all the world's a stage," (Shakespeare, trans. 1963, 2.7.139) and every social act is some form of performance, so studies with the aim of optimizing performance via reducing anxiety can not only inform but also elevate the research in all fields. Ideally, MPA researchers can continue studies that will not only aid those already affected by MPA, but also find preventative measures. Intervention is a reactive approach to an already existing problem, at which point, the performer will likely need to take time and energy to continually address their MPA. Due to this, I designed my study as a preliminary step toward MPA-informed teaching.

In this endeavor, it is important to note what is currently known about the prevalence and experiences of MPA in young adolescent music students, as well as what has been communicated to educators. Obfuscating this knowledge, a 2023 systematic review found that the majority of MPA studies do not specify the levels of MPA experienced by their participants (Gomez-López & Sánchez-Cabrero), with even fewer reporting prevalence. For example, Patston and Osborne (2016) administered the MPAI-A and the Child Multidimensional Perfectionism Scale (DeKryger, 2005) to 526 private school students in grades 5-12 in Australia and found a strong correlation between MPA and perfectionism from ages 10-17, and that these levels increased with years of experience within this age group, but did not report prevalence. Additionally, Tardif et al. reported that there were moderate levels of MPA in their sample of 164 9–12-year-old music students, but did not report the prevalence in their sample (2024). As a study that did report prevalence, Fernholz et al.'s 2019 systematic review reported that MPA prevalence ranged from 16.5% to 60%, in part due to inconsistent definitions of the phenomenon. However, Fernholz et al.'s review (and much of the aforementioned research in this literature review), was with an older population (Blair & van der Sluis, 2022; Gomez-López & Sánchez-Cabrero, 2023), and relatively few studies have examined school-age children.

According to my research, there are currently three studies that have reported the prevalence of MPA in school-age children. Fehm and Schmidt (2006) surveyed 74 15–19-year-old students from a German special music school with the German version of Cox and Kenardy's (1993) Performance Anxiety Questionnaire (Fehm et al., 2002). In this study, 33% had clinically relevant MPA and 73% of students reported that anxiety had a negative impact on their performance (Fehm & Schmidt, 2006). More recently, Papageorgi (2022) surveyed 410 student musicians ages 12-19 in Cyprus and the United Kingdom, utilizing their own Young Musicians' Performance Questionnaire (2007a), including the author's Adolescent Musicians' Performance Anxiety Scale (2007b), reporting that 11% of participants experienced high levels of MPA. In

2023, Spahn et al. surveyed 67 German brass students ages 13-26 utilizing the Kenny Music Performance Anxiety Inventory for adults (2009, 2011) and found that 10% experienced high dispositional MPA, with a Performance-specific Questionnaire for Musicians (Spahn et al., 2016) revealing that on average, students were very nervous before a specific performance. My study adds to this developing body of research as it is set in the United States, utilizes the most commonly used scale across the literature (and one validated for adolescents), and focuses on music students in both vocal and instrumental ensembles.

While a lower level of anxiety is necessary to spur optimal performance, is it possible to prevent its potential to rise to the level of debilitating performance anxiety altogether? Can we maintain the blissful, uninhibited musical experience seen in young children while still continually striving for musical excellence? How many more children would engage in enjoyable music making if they were not deterred by MPA and its resulting negative playing experiences? Studies guided by these questions have implications for parenting and all levels of education in the hopes of raising and shaping musicians to be less affected by anxiety. Ultimately, work in this area would help to make music performance more authentic, connective, transformative, and enjoyable for both performers and their audiences.

3. METHODOLOGY

Purpose

In following the National Association for Music Education (NAfME)'s standards, music educators teach students how to perform and share their music with others (NAfME, 2014). Unfortunately, music students can find that performing in front of others can have an adverse effect on their performance. Thus, music performance anxiety (MPA) can affect students in any setting with an audience, including during the learning process in lessons with their teachers. Particularly for young music students, their lack of experience compounds the problem (Valentine, 2002), potentially creating a vicious cycle. Therefore, in the effort to identify MPA earlier, or even before it starts, I planned to study middle school ensembles.

These ensembles are often students' first experiences with playing in front of others, not only in the group setting of concerts, but in rehearsals (in which various sections or individuals might be isolated to play a section in front of the rest of the ensemble), and in small group and/or individual lessons with the teacher. Middle school is also a pivotal time as adolescent students are formulating their identities and determining what role, if any, music has in their idea of self (North & Hargreaves, 1999). Additionally, young developing musicians lack both protective barriers of age and experience against MPA (Fernholz et al., 2019; LeBlanc et al., 1997; Sadler & Miller, 2010; Steptoe & Fidler, 1987), so an anxiety-affected musical experience can have a greater effect, which can then have a further effect on students' musical participation (Bloom, 1976; Sichivitsa, 2004). Consequently, MPA can be particularly detrimental for the student population. However, despite this age group's increased risk for MPA, there is not yet data on the prevalence of MPA in middle school students in the United States.

Research Questions

As written in the introductory chapter, this study aimed to answer two overarching questions: To what extent do middle school students experience MPA in their school music program, and how do they experience the phenomenon? These questions were broken into quantitative and qualitative lines of inquiry:

1. *What is the prevalence of MPA in grades 6-8 at a private school in the southeastern United States according to the Osborne-Kenny MPAI-A scale?* (Quantitative)
2. *Does the prevalence of MPA vary based on different factors (e.g., age, years of experience, type of ensemble)?* (Quantitative)
3. *How do middle school students recognize and describe their experiences with MPA in performances, the classroom, and their own practice?* (Qualitative)

With both quantitative and qualitative research questions, this study was conducted using a sequential mixed method design (Creswell & Plano Clark, 2018). This design begins with a strand following either quantitative or qualitative inquiry, with the second strand being informed by the first and providing further explanation for the findings of Strand 1, and a final third strand combining the findings from the previous two strands in the sequence (Tashakkori et al., 2021). My sequence was driven by my research questions, leading to a quantitative Strand 1 and a qualitative Strand 2 (i.e., QUAN → qual design), resulting in an explanatory sequential design (Tashakkori et al., 2021). Strand 1 was designed to answer my first two quantitative research questions. For quantitative question #1, I hypothesized that a majority of middle school students would experience a low to moderate amount of MPA as measured by the Music Performance Anxiety Inventory for Adolescents (MPAI-A; Osborne & Kenny, 2005) scale, with a smaller subset experiencing high levels. In a 2019 systematic review of 43 studies of MPA with adults, MPA prevalence was between 16.5% and 60%, and so my prediction was limited by the small number of studies in this area (Fernholz et al.). In the first study specifically examining MPA prevalence rates for children and adolescents, Papageorgi found that 11% of participants experienced high levels of MPA, although this study was done with a different (and self-developed) scale than the one that was utilized in this study, and with musicians in Cyprus and the United Kingdom (Papageorgi, 2022). Therefore, it was interesting to see the prevalence in this age group, in this country (particularly with the American music education model focusing more on performance than the education model for the sample examined in Papageorgi's study), and using the most widely used scale for assessing MPA. This scale, the MPAI-A, addresses somatic, cognitive, and behavioral components of MPA (Osborne & Kenny, 2005), and I suspected that students would most readily self-select for somatic components due to the ease of recognizing physical manifestations, especially at the younger ages (Irie et al., 2023). Based on previous literature, I thought it was also likely that females would exhibit higher levels of MPA, as this has been found in prevalence rates for adults (Fernholz et al., 2019) and children (Osborne & Kenny, 2005). That said, the question of gender and MPA level could only be explored with the 7 students who underwent the survey and interview, as the school did not collect gender information in their administration of the survey.

For quantitative question #2, I hypothesized that increased age and years of musical study would lower MPA, and that MPA would be higher in instrumental versus choral ensembles. Age and years of experience have been demonstrated to lessen MPA (Sadler & Miller, 2010), and so I suspected that older students, and especially those with more years of playing (perhaps even starting earlier than in 6th grade), would exhibit less MPA. According to my research, studies on MPA prevalence in adolescents have not yet been done in American choral and instrumental ensembles simultaneously, and so I was curious to see comparisons between the ensembles. There are a number of factors based on the type of ensemble that could cause differences in a student's MPA experience. First, there is an obvious structural difference between vocalists and instrumentalists: using one's own voice (and identity ramifications within) versus an external instrument. Secondly, the musical roles in each ensemble differ. In choirs, one is typically singing the same part as a number of other students, which could lessen MPA due to the increase in co-performers (Brugués, 2011; Wilson & Roland, 2002). In band and orchestra, one might be more musically exposed in their part assignments. As another factor worth consideration, a student's perceived stress could vary depending on whether one plays a melody versus harmony versus percussive role, for example. In Sokoli et al.'s 2022 study of music university students, singers reported fewer anxious feelings than instrumentalists, providing some insight for my hypothesis that MPA would be higher in instrumental ensembles.

Strand 2 was designed to answer my third qualitative research question and investigate how students recognize and describe their experiences with MPA. Qualitatively, I anticipated that age and years of experience would influence the extent to which students describe their experiences, with an increased ability to recognize MPA at the later grades of middle school. I also predicted that students in choral ensembles would have an easier time expressing experiences with MPA, due to the context in which choral students perform (i.e., using one's voice instead of holding an instrument between themselves and the audience). However, I was not able to acquire a representative sample across age, years of experience, and type of ensemble to fully test these predictions. This said, I had a third prediction for the interviews that did not split my sample (n = 7). Similarly to my conjectures for the survey responses, I thought that students would most clearly be able to recognize and describe somatic manifestations of MPA in their interviews (Irie et al., 2023).

The final strand, Strand 3, then compiled the data collected in the prior two strands, providing more context and nuance to the answers of my three research questions. As such, I had no further hypothesis, but I anticipated that analyzing the quantitative and qualitative data together, in combination with tacit theories, would uncover further insights into students' MPA.

Research Design

The Case for Mixed Methods

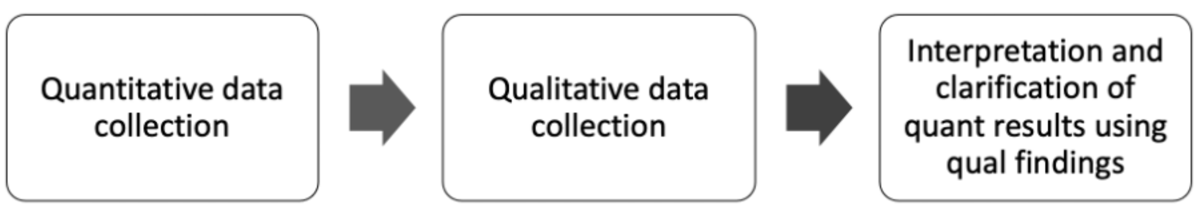
Each student musician has an individualized experience with MPA. Due to this, I took on the philosophical position of pragmatism, believing that "meanings exist both objectively and subjectively through intersubjectivity" (Wallace & Wray, 2021, p. 107). Following this paradigm, I developed both quantitative and qualitative research questions and therefore strove to gather both objective and subjective data, collecting information that was independent of students' meanings as well as data on students' meanings and their resultant actions (Wallace & Wray, 2021). Through this work, I ultimately hope to have future transferability to music educational practice (Morgan, 2007). Therefore, I needed to utilize methods of quantitative and qualitative inquiry to answer my research questions and construct a full understanding of students' experiences in the classroom (Chilisa & Kawulich, 2012). To examine this complex condition, I took a constructivist approach, as I sought to gain understanding of the phenomenon of MPA through studying students' constructions of MPA (Steffe & Gale, 2009). This approach of quantitative and qualitative data collection and analysis also allowed best for data crystallization, with each method strengthening the credibility of the others (Denzin & Lincoln, 2005), constructing a more complete picture of student MPA to communicate to researchers and educators. Thusly, my goals for this study, my research-informed understanding of MPA, and my resultant research questions drove my research design. This thereby necessitated a mixed method design, specifically, the development of an explanatory sequential design.

Overview of Study Design

Through an explanatory sequential design (Ivankova et al., 2006; Patton, 2009), I intended to gain insight on how students experience MPA. Following my mixed methods approach, this design involves a mixture of types of strands across the study. The first strand begins with initial quantitative data collection and interpretation. This is followed by qualitative data collection and interpretation in strand two. In the third and final strand, the first two strands of inquiry are integrated. Through this synthesis, the researcher outlines how the qualitative results contextualize the quantitative results (Creswell & Plano Clark, 2018; Ivankova et al., 2006). A graphic representation of an explanatory sequential design can be found in Figure 1.

Figure 1

Structure of an Explanatory Sequential Mixed Methods Design



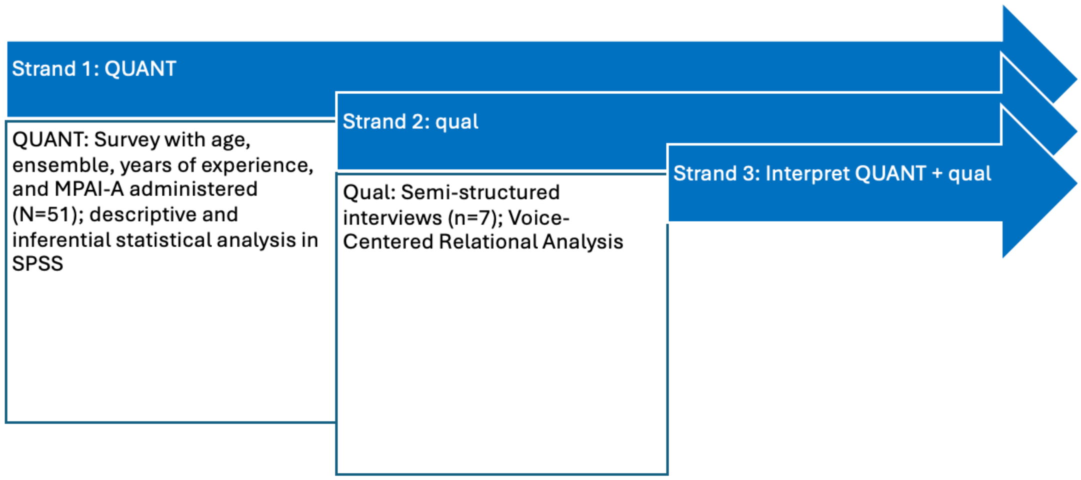
Using a constructivist phenomenological approach, I worked to construct a message for an audience of music educators who "need to understand the lived experience" of their students in musical study (Starks & Brown-Trinidad, 2007, p. 1373). To more fully understand the students' lived experiences, my mixed methods strands allowed me to examine the phenomenon from multiple angles. Quantitatively, for Strand 1 of my inquiry, I assessed the prevalence and severity of MPA in middle school students with the validated Music Performance Anxiety

Inventory for Adolescents (MPAI-A; Osborne & Kenny, 2005), and the data took the form of survey responses for descriptive statistical analysis ($N = 51$). This questionnaire also included demographic information (e.g., age [via grade level], years of musical study, and type of ensemble, as well as gender for the 7 students who participated in the survey and interview) in order to gain descriptive correlation analysis results. This said, these numbers only told part of the students' stories of MPA. As such, I added qualitative methods in Strand 2.

Qualitatively in Strand 2, I utilized semi-structured interviews with open-ended questions in order to construct a narrative of my participants' experience. In following my sequential design, I had initially planned to use MPAI-A score results from the questionnaire to select a smaller sample of participants across the middle school grade levels for Strand 2's interviews. However, when I only had 7 child assent and parental permission forms signed after weeks of recruitment attempts, I had to select the 7 who had volunteered. After collecting the survey and interview data, I then integrated the findings from the first two strands in Strand 3, discussing areas of both confirmation and contradiction between the quantitative and qualitative data. Figure 2 depicts the explanatory sequential design for my study.

Figure 2

Study Design



Setting and Sample

The setting of this study was Terminus International School (TIS)[4]. TIS is a 3K-12 private, non-profit, International Baccalaureate World School. TIS is one of few schools in the United States to offer an International Baccalaureate program in the full continuum of 3K-12. TIS has a 100% graduation rate, and graduates pursue higher education at top-100 ranked universities. This school has a primarily high-SES population, and the tuition for grades 5 through 8 is $32, 382. TIS has a 7 to 1 teacher to student ratio, with under 1,500 in the student body. TIS's student body is international, with 90 nationalities within the student community, and 61% of students identifying as people of color, more than 65 languages spoken among the student population, and the school features full and dual-immersion language programs. The school has a robust music program, with academic music classes, co-curricular music performance ensembles, and a private music lesson program after school. In the middle school,

[4] The name of the school has been pseudonymized. School information was found on the school website.

students take general music, and can participate in the following ensembles: Choir, Band, and String Orchestra. I gathered information about the school through the Co-Curricular Arts Coordinator at TIS, who was my point person for the school. I initially had a second setting of a charter school in the same southeastern area, but did not receive any permission forms after several weeks of recruitment attempts, and so focused on TIS.

Terminus International School's Music Program

The Co-Curricular Arts Coordinator at TIS also helped me to gather demographic information about the middle school music program. There were 54 middle school students enrolled in an ensemble at the time of my study, with 37 females and 17 males. Across the grade levels, the program had fourteen 6^{th} graders, eleven 7^{th} graders, and twenty-nine 8^{th} graders. Of this, 14 were in Orchestra (seven 6^{th} graders, two 7^{th} graders, and five 8^{th} graders), 12 were in Chorus (five 6^{th} graders, one 7^{th} grader, and six 8^{th} graders), and 28 were in Band (two 6^{th} graders, eight 7^{th} graders, and eighteen 8^{th} graders). The school has rolling admission, but assuming 100 students per grade, the music program had 14% of the 6^{th} grade student body, 11% of the 7^{th} grade students, and 29% of the 8^{th} grade students, with an overall of 18% across grades 6 through 8.

At TIS, all students in grades 6 and 7 will have one semester each of music, theatre, media, and visual arts across the two-year period. The music requirement can be fulfilled by an ensemble or a general music class. This exposure to all four arts disciplines in grades 6 and 7 gives way to choice in their 8^{th} grade year, when students will choose two of the four arts they wish to study further for one semester each during their 8^{th} grade year. At the time of my study, the ensemble program had a 31% attrition rate, with 17 students being new to the music program, and 7 transfer students who were new to TIS for the 2023-2024 school year. 23 of the 54 music students also participated in TIS's after school private lessons program.

Music Students' Experience at the Time of Study. To provide further context for the data I collected and analyzed, it is worth noting the learning climate at the time of data collection. During data collection (March-April 2024), the students who were in the ensembles during the first semester of the 2023-2024 year had experienced two performances prior, one in the fall for TIS's Early Learning Center 3-and-4-year-old language immersion program and the other being their formal Winter concert. The audience for the latter concert consisted of faculty, parents, family, and friends. Some students who took the survey participated in the school's Orlando Music Festival trip on March 15-17. The competition performance on this trip was for a panel of 3 judges who scored and critiqued the performance. In most instances, the size of the audience during their competition performance was limited to less than 15 people, including the judges.

Sample

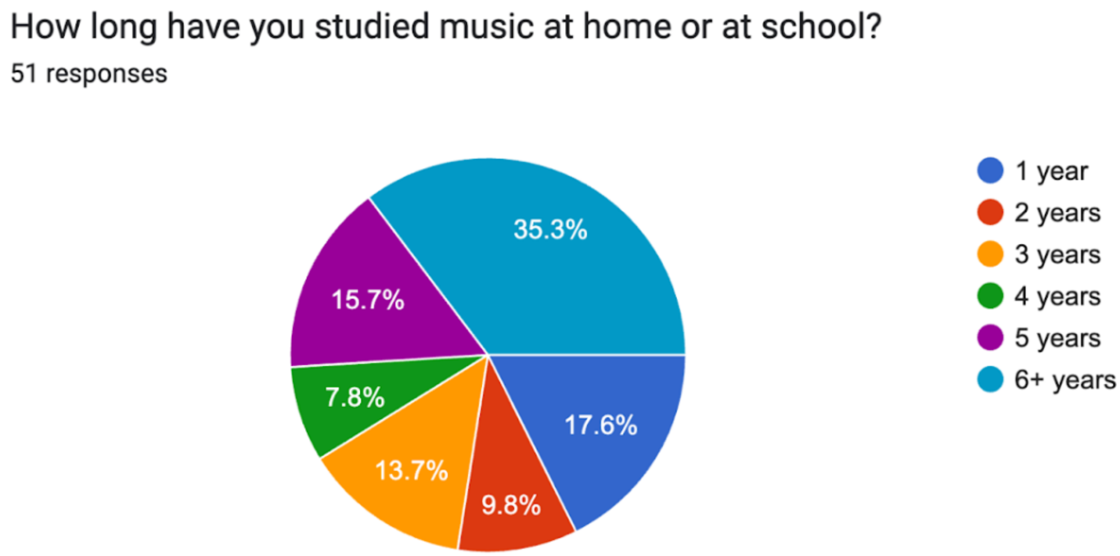
As I aimed to study a specific condition, I needed to conduct purposive sampling. I needed to gather participants who met the following conditions: 1. middle school student, 2. Was currently enrolled in a music ensemble class. This purposive sampling allowed me to then critically examine the psychological variability within my sample (Smith et al., 2009). For Strand 1's survey, I had planned to have a sample of at least 30 students out of the total population of 54 middle school music students. However, when only 7 students had turned in the permission forms, the teachers at TIS expressed interest in learning more about MPA in their students and so offered to administer the survey in their classes as part of their curriculum, and then to offer me the deidentified data. In this way, I was able to gather survey data from 51 of the 54 students.

Although this sample did not contain information regarding gender, it granted me a larger sample than I had initially hoped for, and it allowed me to examine both vocalists and instrumentalists including band, orchestra, and choir in order to note if there are any differences based on the type of ensemble.

Sample for Strand 1 Survey. Of the 51 students who were given the survey in their ensemble classes, 13 were in Orchestra (25.5%), 14 were in Chorus (27.5%) and 24 were in Band (47.1%). 13 students were in 6th grade (25.5%), 14 were in 7th grade (27.5%), and 24 were in 8th grade (41.1%). The Orchestra sample contained seven 6th graders, two 7th graders, and four 8th graders. The Chorus sample contained five 6th graders, two 7th graders, and seven 8th graders. The Band sample contained one 6th grader, ten 7th graders, and thirteen 8th graders. On average, students within each grade level reported 4 years of musical experience. Figure 3 shows the distribution of the years of experience among the 51 students surveyed, with 17.6% reporting 1 year of experience, 9.8% reporting 2 years, 13.7% reporting 3 years, 7.8% reporting 4 years, 15.7% reporting 5 years, and the majority, 35.3%, reporting 6+ years of musical study.

Figure 3

Years of Musical Experience for Survey (N = 51)



Sample for Strand 2 Interviews. When proposing this study, I planned to select n = 18 for Strand 2's interviews based on the results from Strand 1, with equal representation from each grade and type of ensemble. Unfortunately, as previously stated, only 7 students who were willing to participate in interviews turned in the required permission forms. Therefore, this smaller sample n = 7 is not equally representative of the larger sample N = 51, and did not necessarily feature those with the highest levels of MPA, but rather, those who were most willing to talk about MPA with a researcher. These 7 students both took the survey and conducted the interview with me, allowing for a more direct comparison between the quantitative and qualitative data. Table 1 describes the 7 participants with demographic data and their recorded MPAI-A score at the start of the interview.

Table 1

Descriptions of Interview Participants (n = 7)

	Gender Identity	**Ensemble**	**Grade Level**	**Years of Music Experience**	**MPAI-A Score *(out of 84)***
Participant 1	Male	Chorus	8th	6+	37
Participant 2	Female	Chorus	6th	6+	52
Participant 3	Female	Orchestra	8th	6+	65
Participant 4	Male	Band	8th	6+	12
Participant 5	Male	Band	8th	6+	8
Participant 6	Female	Band	7th	5	51
Participant 7	Female	Band	7th	5	12

*Note: on the MPAI-A score, a higher number indicates a higher level of MPA.

Procedures Utilized

In my research design, the first two strands involved coordinating with my study site, TIS. This section describes the procedures utilized prior to data collection, and those utilized in the first two of the three study strands.

Gathering Participants

To gather participants, I coordinated with Grant Hayes[5], the Co-Curricular Arts Coordinator at TIS to act as a gatekeeper and help me to find participants at the middle school. Together, we scheduled a class meeting for all of the middle school ensembles, introducing myself and my study. Here, I went over each stage of the study and what would be expected of participants, and was available for questions regarding the study. I also handed out paper copies

[5] The name of the Arts Coordinator has been pseudonymized.

of the child assent and parental permission forms. These forms were also emailed to the students and parents through Grant Hayes, my point person at TIS. These forms had my contact information in case parents and/or students had any questions about the study. Signed forms were then emailed to me.

Strand 1 Procedures

In Strand 1, I utilized a survey with demographic information and the MPAI-A (Osborne & Kenny, 2005), gathering information on participants' musical experience and their experiences with MPA ($N = 51$). After low recruitment, the music teachers at TIS offered to administer the survey as part of their curriculum as they were interested in learning about their students' MPA. After checking with the Institutional Review Board, I took the music teachers up on their kind offer. As such, the survey was delivered in class at the end of March 2024 and the beginning of April 2024 for each middle school ensemble. The survey was distributed via the students' Google Classroom page, and basic instructions were given to complete the survey at the beginning of the class. As this survey was administered by the school, one of the TIS music teachers compiled and de-identified the data to then be shared with me. I then inputted and analyzed this data in SPSS.

Strand 2 Procedures

In Strand 2, I then conducted interviews with the 7 participants from TIS who turned in the parental permission and child assent forms. I had initially planned to interview those with the highest levels of MPA according to the MPAI-A scale, with a representative sample from each grade and ensemble. Unfortunately, after only receiving permission forms from 7 students, I decided to interview all 7, regardless of their MPAI-A scores and whether this was a truly representative sample from the middle school ensembles. These interviews were 1 on 1 with individual students, as anxiety can be a sensitive topic. I coordinated with Grant Hayes to make an interview schedule where participants were pulled from their ensemble class for up to 30 minutes. These interviews were held in a private music room with me, and I first had students take the survey on their computer. While this was the students' second time taking the survey as they had already taken it in their ensemble class, this allowed me to directly compare their survey responses to their interview, and find both alignment and discrepancies between their quantitative and qualitative data. These 7 students' second survey submission was not counted in the Strand 1 quantitative data so as not to count their data twice. After the student completed the survey, I then quickly calculated their MPA score to inform my qualitative data collection while I had them read instructions about the interview. After asking if they had any questions about the study, we began the interview, with me recording using Otter.ai to transcribe the audio on my computer, and I also recorded on my phone as a backup given the quality of the Wi-Fi in the music rooms. After transcribing the interviews, I emailed a copy of each participant's transcript to them for member checking. After each participant completed their member check, I then analyzed this data in NVivo.

Data Collection

In my explanatory sequential design, the first two strands involved data collection (i.e., quantitative data collection in Strand 1 and qualitative data collection in Strand 2). Strand 3 then integrated the data collected in the prior two strands. As such, this section outlines the data collection for the first two strands of my study.

Strand 1 Instrumentation

First, in the aim to investigate the prevalence of MPA in the middle school ensembles, students were given a survey delivered in a web-based format using Google Forms. This questionnaire consisted of two sections: one gathering demographic information (e.g., age, type of program, years of musical experience), and one using the Music Performance Anxiety Inventory for Adolescents (MPAI-A; Osborne & Kenny, 2005). The MPAI-A is an adapted version of the original Kenny Music Performance Anxiety Inventory (K-MPAI; Kenny et al., 2004; revised 2009) that has been validated for students aged 12-19 (Osborne & Kenny, 2005), and for ages 11-13 (Osborne et al., 2005).

The K-MPAI is the most widely used self-report measure of MPA, and was constructed to address all three components of Barlow's emotion-based theory of anxiety disorders: cognitive, behavioral, and physiological (Barlow, 2000), as well as underlying psychological vulnerability (Kenny, 2011). The revised version for adolescents (the MPAI-A) is a shorter, adapted readability version of the adult version, and has a Cronbach's alpha of .91 (Osborne & Kenny, 2005). The MPAI-A includes questions regarding three factors of MPA: somatic and cognitive features, performance context, and performance evaluation. This instrument has 15 items that address the somatic (e.g., "Before I perform, I tremble or shake"), cognitive (e.g., " I often worry about my ability to perform"), and behavioral (e.g., "I try to avoid playing on my own at a school concert") aspects of MPA (Osborne & Kenny, 2005). Each aspect of MPA (i.e., somatic, cognitive, and behavioral) is represented by 5 of the 15 items, in a mixed order. These questions are on a 7-point Likert scale ranging from 0 ("not at all; hardly ever") to 6 ("all or most of the time"). For all but one of the 15 questions, a higher number indicates a greater severity of MPA (Osborne & Kenny, 2005). Therefore, the top possible score is 84, indicating the highest level of MPA. This survey was administered on computers in class, and the entire survey can be found in the appendix (7.1).

Strand 2 Instrumentation

To examine the experiences of MPA amongst the middle schoolers at TIS, I engaged in interviews in Strand 2. Qualitative data collection in this second strand allowed me to help explain or elaborate on the quantitative data gathered in Strand 1 (Ivankova, 2006). Following the constructivist paradigm, these interviews were semi-structured, with open-ended questions allowing for follow-up questions. Open-ended questions, such as “Describe what goes on in your brain when you perform. What do you feel?” allowed me to investigate students’ representations of the world in their thoughts (Wilkinson & Hanna, 2016). Other interview questions were extensions of the quantitative survey from Strand 1, investigating physical, emotional, and behavioral manifestations of MPA. I also asked questions about how the participants handle MPA, and what, if anything, helps. My interview protocol and questions can be found in the appendix (7.2). This said, some of the interview questions were based on the results of Strand 1, and so the exact questioning was subject to change depending on how these 7 students answered the survey so that Strand 2 was informed by Strand 1 in a sequential manner. The questions I asked were also malleable in response to what students shared during their interview. The quantitative and qualitative data from Strands 1 and 2 were then integrated, providing the data for Strand 3.

Data Analysis

My mixed methods study provided both quantitative and qualitative data with survey and interview responses. Accordingly, this section recounts the data analysis utilized for each of the three strands in the sequence of my study.

Strand 1: Descriptive and Descriptive Inferential Statistical Analysis

My quantitative methods gathered survey responses, providing statistical data that I analyzed using SPSS’s descriptive and inferential statistical features (i.e., regression). The dependent variable was the MPA score, with the independent variables of the type of ensemble, age (via grade level), and years of playing. Using a model comparison analysis, I looked at demographic factors and their correlations with features of MPA. I first used a reduced model where anxiety level (as measured by the MPAI-A) was the outcome and type of program (i.e., chorus, band, orchestra) was the variable of interest. Then, in my complete model, I controlled for the type of program and used a multiple regression to examine any relationships between age, years of experience, and MPA levels.

Strand 2: Voice-Centered Relational Thematic Analysis

The data generated by my qualitative method of interviews was coded and analyzed in NVivo through voice-centered relational analysis (Mauthner & Doucet, 1998). This analysis method allowed me to "explore in detail participants' personal lived experience and how participants make sense of that personal experience" (Smith, 2004, p. 40), as I strove to understand the data at a "more interpretative and psychological level" (Smith, 2004, p. 44). Particularly as the middle school age group has largely been ignored in MPA literature as of now, my aim was not to give "voice" to this population, but to center the student voices in my analysis and subsequent discussion (Mauthner & Doucet, 1998).

Mauthner and Doucet's "Voice-Centered Relational Method" involves four directed readings of interview data: 1. "Reading for the plot and for [our] responses to the narrative," in which I gathered the initial story and my reaction to it, 2. "Reading for the voice of the 'I'," in which I focused on students' identity and self-efficacy, 3. "Reading for relationships," in which I critically examined the student-student/co-performer and student-teacher relationships within the ensembles, and 4. "Placing people within cultural contexts and social structures" of the performing ensembles (1998, p. 130-147). I generated inductive codes and themes from each of these directed readings, which can be found in the appendix (7.3).

Following these multiple in-depth readings of the data, and building from my coding and content analysis, I was then able to uncover themes that emerged from the data. Here, I then deliberately broadened from the codes and content analysis, utilizing the flexible nature of thematic analysis to ensure that I considered more possibilities. Mirroring the role of a theme in a piece of music, this style of analysis allowed me to find what “ties [the] piece together” (Marshall et al., 2022, p. 228). As I found themes, tracked their occurrences, and drew connections between them, a recurring theme became a driving force in a singular interview, throughout the other interviews in Strand 2 of my inquiry, and for my study as a whole. Then, I returned to a narrowing in Strand 3, tying the data into a cohesive narrative in my discussion section so as to form a communicable message to influence music pedagogy.

Strand 3: Tying it Together With Tacit Theories

Finally, in Strand 3, I integrated the results from the prior two strands, using the qualitative results to provide a deeper understanding of the quantitative survey results (Ivankova et al., 2006), in the aim to explain the prevalence and experience of MPA in American middle school students. Here, I combined the results from Strands 1 and 2, looked for confirmation and conflict between the results, and grouped findings by my quantitative and qualitative sub questions. In doing so, I referenced related literature from both quantitative and qualitative studies. In Strand 3, I also linked my findings to tacit theories, particularly theories surrounding musical identity (e.g., Bandura’s 1977 self-efficacy theory and Covington’s 1984 self-worth theory) to support my research findings and extend understanding of these existing theories.

Such theories were utilized in response to what emerged from this descriptive study, particularly in response to what arose in the interview stage of the study.

In this Strand 3 analysis, I did not solely focus on connection across participants to find a universally shared experience, but I also highlighted the uniqueness of each individual's experience. I analogize this to a performing ensemble itself; each individual in the orchestra has a role to play as a solo player of their own instrument, a member of their instrument section, their instrument family, their role within the piece (e.g., melody, harmony, countermelody), and their role as a member of the ensemble as a whole. In this study, I strove to acknowledge all of these stories. This process was "iterative and inductive" as I worked to discover commonalities across participants to find a universally shared experience, but to still highlight the uniqueness of each individual's experience (Smith et al., 2009, p. 80).

Credibility and Ethics

In the pursuit of a quality mixed methods research study, I had to be transparent about the methods and potential challenges of my study as I considered the ethics of my research (Tracy, 2010). In taking on a mixed methods study, one must consider the ethics for each of the individual methods being used. All research methods contain some level of risk, and in combining interactions from method to method, there is not only an additive effect, but a compounding of risk between elements (Vogt et al., 2012). To start, I strove to establish credibility through my 6-month engagement in the school and crystallization amongst quantitative and qualitative methods (DeCuir-Gunby & Schutz, 2017). I adequately described the research plan to parents, students, and the music teachers facilitating my research; not so much as to overwhelm and dissuade participants, but not understating what I was asking of participants.

Since I studied middle school children, coordinated communication was needed between myself and the school, parents, and the students to ensure that all were fully aware of the purpose of the study, and that my participants felt safe throughout the research. To do this, I strove to be clear in explaining my research plan to the school, my participants (the students), and their parents. I needed to coordinate with TIS, utilizing a willing music teacher (and head of the department) who acted as a gatekeeper and helped me to find student participants. This music teacher and I communicated regularly throughout the study through emails, shared Google documents, texts, and phone calls.

Especially as an outsider working with younger students, I stayed aware of the role and power I held and took extra consideration to build rapport in my relationships with my participants throughout the course of working with the school (Esposito & Evans-Winters, 2022). I started this by introducing my study to potential participants in person. From this initial meeting, I was highly communicative and reachable for my participants, their parents, the music teachers, and the school's administration. My gatekeeper, the head of the music department at TIS, was incredibly helpful, and our continual open line of communication ensured ongoing reflection and course correction as needed throughout the study.

One specific consideration was in the interview stage of my design. Grant Hayes helped me to find interview times and available spaces that felt safe and comfortable for the students. (Esposito & Evans-Winters, 2022). I also planned an opening question having students talk broadly about their music learning experience and why they engage in music learning to help put students at ease in the interviews. Additionally, I needed to confidentially track my participants (n = 7) throughout the stages of gathering my quantitative and qualitative data (e.g., the survey and interview). I worked for credibility through member checking with my participants after transcribing the interviews (Esposito & Evans-Winters, 2022). I did this by emailing students a copy of the transcript of their interview, giving them a week to make any changes as they wished.

In my data analysis, I engaged in reflexivity as themes emerged from the data, as my reflections and those of my participants contributed to the final report, while I acknowledged my interpretative role (Brocki & Wearden, 2006). I simultaneously needed to engage in reflectivity as I ran and analyzed my data but also to "remove (my)self from the situation to rethink the meanings of the experience" (Maykut & Moorhouse, 1996, p. 23). This continual reflection was cyclical, as I reexamined and applied my theoretical framework throughout my developing schemas through the research process. Through my stages of data collection and analysis, constant reflection guided me as I strove to crystallize the data to form a coherent and actionable message to music teachers.

Data Management

I fully protected the privacy of my research participants. Data was anonymized and then stored on my cloud storage which is password protected. Only study personnel had access to this data. The school administered the survey during ensemble classes ($N = 51$), and this data was de-identified before it was shared with me. Participants who were known to me given they engaged in the interview portion of the study ($n = 7$) were pseudonymized. I used pseudonyms throughout transcripts, and have shielded the name of the school site with a pseudonym and by writing, "a private school in southeastern United States." The only key linking names to pseudonyms was kept on the secure data server. After the study is over at the conclusion of my dissertation defense, all identifying data will be deleted.

Timeline

I conducted this study over the course of a half-year (November 2023-June 2024). Following the successful completion of my prospectus in November 2023, I contacted my point person at TIS to start to recruit participants. The music teachers at TIS gave me permission to introduce my study to their students in person in December 2023. Here, I provided paper copies of the consent and assent forms. Emails were then sent to students and parents that introduced my study and included attachments of the consent and assent forms. After months of encouragement between me and the music staff at TIS, only 7 students turned in the permission and assent forms, all agreeing to both the survey and interview parts of the study. My co-chairs then helped me to investigate other means to boost my sample size. As the TIS music teachers were interested in learning more about their students' MPA, Grant Hayes investigated the option of having the music teachers administering the survey, with the school then giving me access to that data as an outside researcher. After weeks of checking with school administration, this was granted in March 2024, and the survey was administered in ensemble classes at the end of March and the beginning of April 2024. I then conducted interviews with the 7 students who turned in permission forms during the second two weeks of April 2024. I used the remainder of my timeline to analyze and write up my findings, and successfully defended my dissertation on June 10th, 2024.

Research Intent

With this study, I hoped to increase understanding of how students experience MPA in order to inform and reform music education pedagogy. In this way, my study was intended to benefit my student participants, as we gained insight on their experiences with MPA, not only to make my research relevant to practice, but to empower the participants of my study. Through increasing understanding of how young adolescents experience MPA, I hope to refine music education pedagogy with the aim to raise and shape student musicians that are less affected by anxiety.

4. RESULTS

Following my explanatory sequential design, the results of my study examining the prevalence and experiences of music performance anxiety (MPA) in young adolescent students are presented here in sequence; starting with the Strand 1 survey results ($N = 51$), followed by the Strand 2 interview results ($n = 7$), and concluding with the integration of the quantitative data, qualitative data, and tacit theories in Strand 3's results.

Strand 1: Quantitative Survey

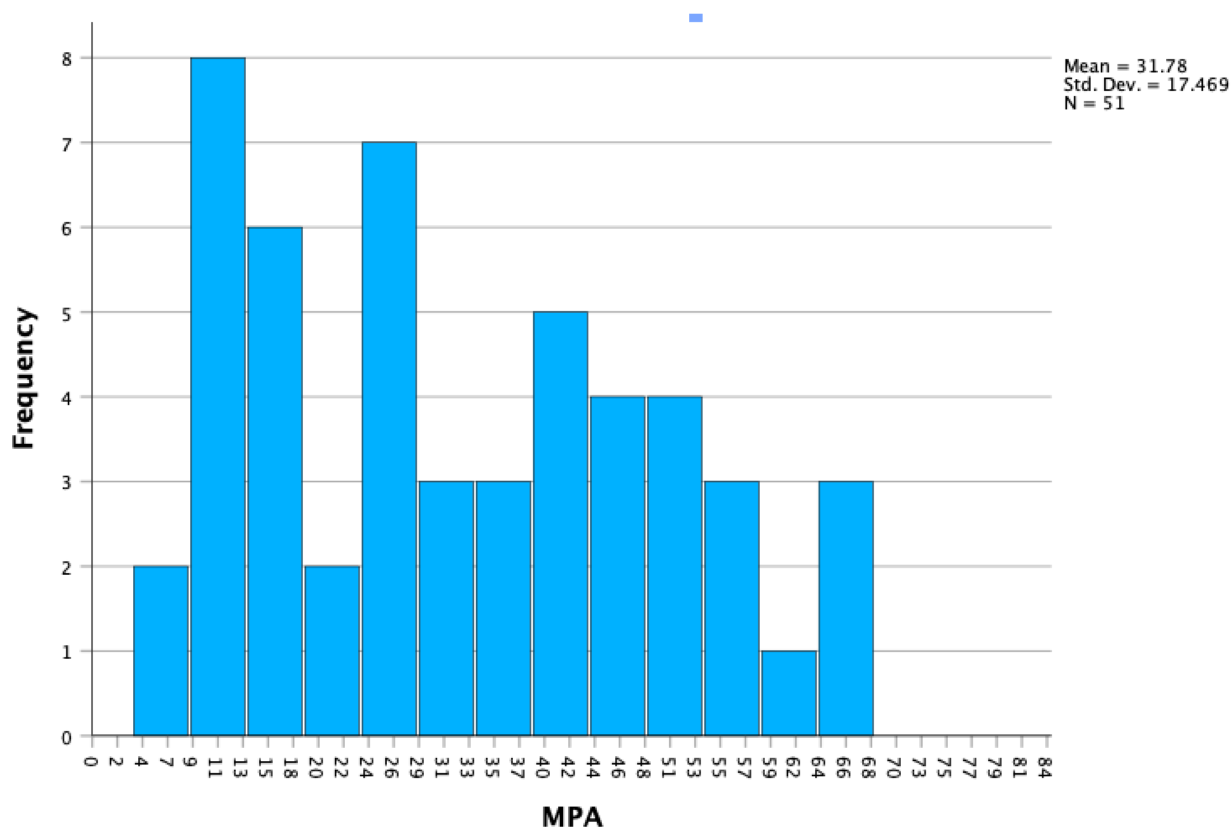
My first research strand was designed to answer my first two quantitative research questions: "What is the prevalence of MPA in grades 6-8 at a private school in the southeastern United States according to the Osborne-Kenny MPAI-A scale?" and "Does the prevalence of MPA vary based on different factors (e.g., age, years of experience, type of ensemble)?" After collecting student survey data and compiling the data into SPSS, I first analyzed the Terminus International School (TIS) students' survey responses ($N = 51$) with descriptive statistics to answer the first and second questions for this sample, and then examined descriptive inferential statistics via regression analysis to further explore the second question and potentially find predictive factors of MPA for the wider population of middle school students.

Descriptive Statistical Data

The descriptive statistical data gathered by analyzing the Music Performance Anxiety Inventory for Adolescents (MPAI-A) segment of the survey responses allowed me to determine the prevalence of MPA in grade 6-8 at TIS. In the MPAI-A scale, the top score is 84, indicating maximum levels of music performance anxiety (MPA), so a low score is desirable. The mean MPAI-A score for the students surveyed, $N = 51$, was 31.78 out of a top score of 84, with the lowest score being 6 (Band student, one year of experience, 8th grader) and the highest score being 66 (Orchestra student, five years of experience, 8th grader). 16 out of the 51 students surveyed (31.37%), had a score of 42 or greater, indicating MPA greater than or equal to the higher 50% of the MPAI-A scale. As the MPAI-A scale is a 7-point Likert scale ranging from 0 ("not at all; hardly ever") to 6 ("all or most of the time"), a score of 42 or greater indicated that 31.37% of students selected answers indicating MPA manifestations at least half of the time in their musical study. Out of the 51 participants, 10 students (19.6%), reported a score of 50 or higher, and 4 students (7.84%), reported a score of 60 or higher. Figure 4 depicts the distribution of MPA scores across the 51 participants, with each bar representing a 4-5-point range of scores.

Figure 4

Distribution of MPAI-A Scores (N = 51)

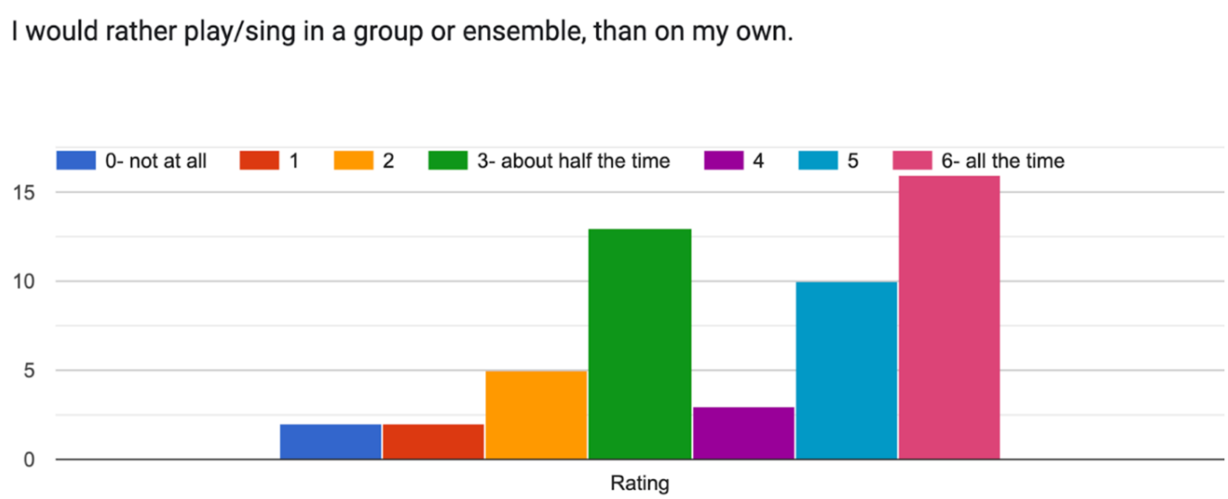


For quantitative question #1, I had hypothesized that a majority of middle school students would experience a low to moderate amount of MPA as measured by the MPAI-A scale, with a smaller subset experiencing high levels. With an average score of 31.78, the results support that my hypothesis was correct.

Of the 15 MPAI-A questions, the question of, "I would rather play/sing in a group or ensemble, than on my own," had the most notable results indicating potential MPA, with 16 students selecting "6-all of the time" (31.37%), and 29 choosing a selection that was "more than half the time" (56.86%). Figure 5 depicts these results.

Figure 5

Student (N = 51) Desire to Play as a Group Instead of Solo

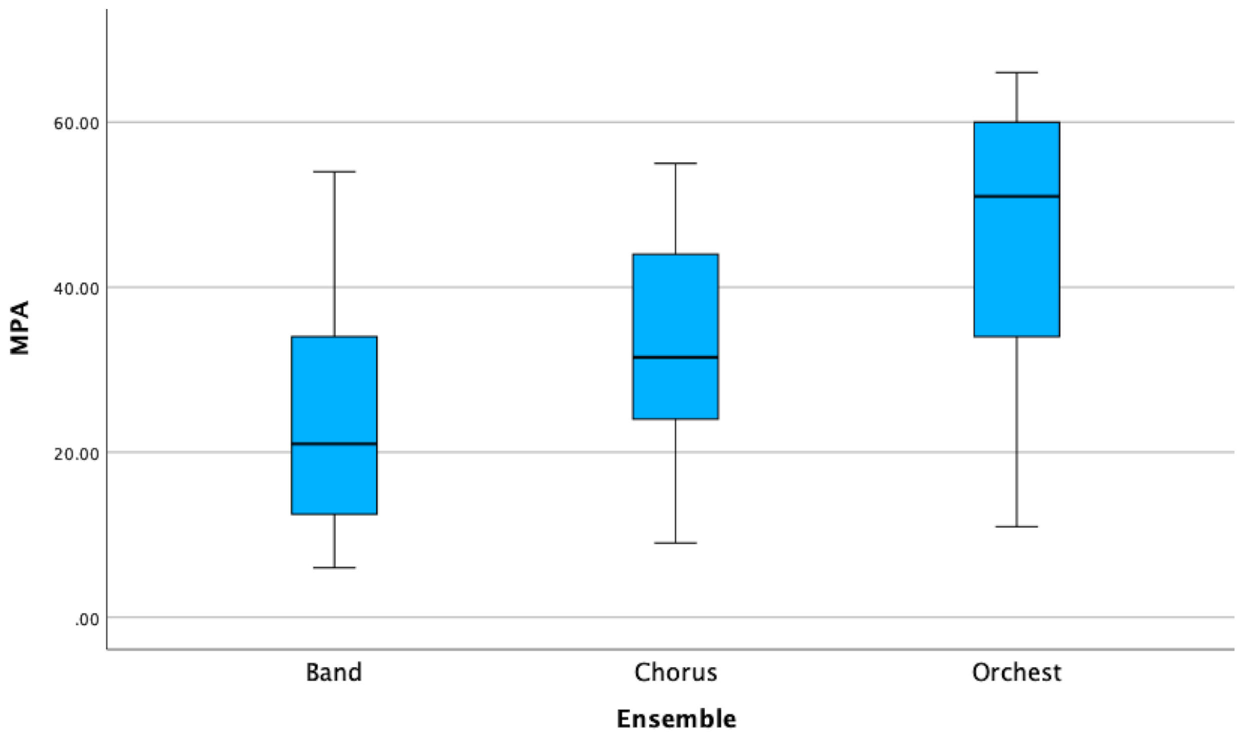


Demographic Factors. By factoring in students' answers to the demographic questions on the survey, I could draw connections between these demographics and MPAI-A scores, examining whether the prevalence of MPA changed based on the type of ensemble, and age/years of experience. For Orchestra students, the average MPAI-A score was 45.54, with a low of 11 and a high of 66. For Chorus students, the average MPAI-A score was 32.07, with a low of 9 and a high of 55. For Band students, the average MPAI-A score was 24.17, with a low of 6 and a high of 54. For quantitative question #2, I hypothesized that MPA would be higher in instrumental versus choral ensembles. The results did not appear to support my hypothesis.

While Orchestra did have the highest MPA levels out of the ensembles, Band exhibited the lowest MPA levels overall. This said, my band sample is skewed older compared to the other ensembles, confounding these results. Figure 6 depicts a box and whisker plot showing this data, and that the maximum and minimum values for each category overlap due to outliers, indicating variance that could cause statistical error.

Figure 6

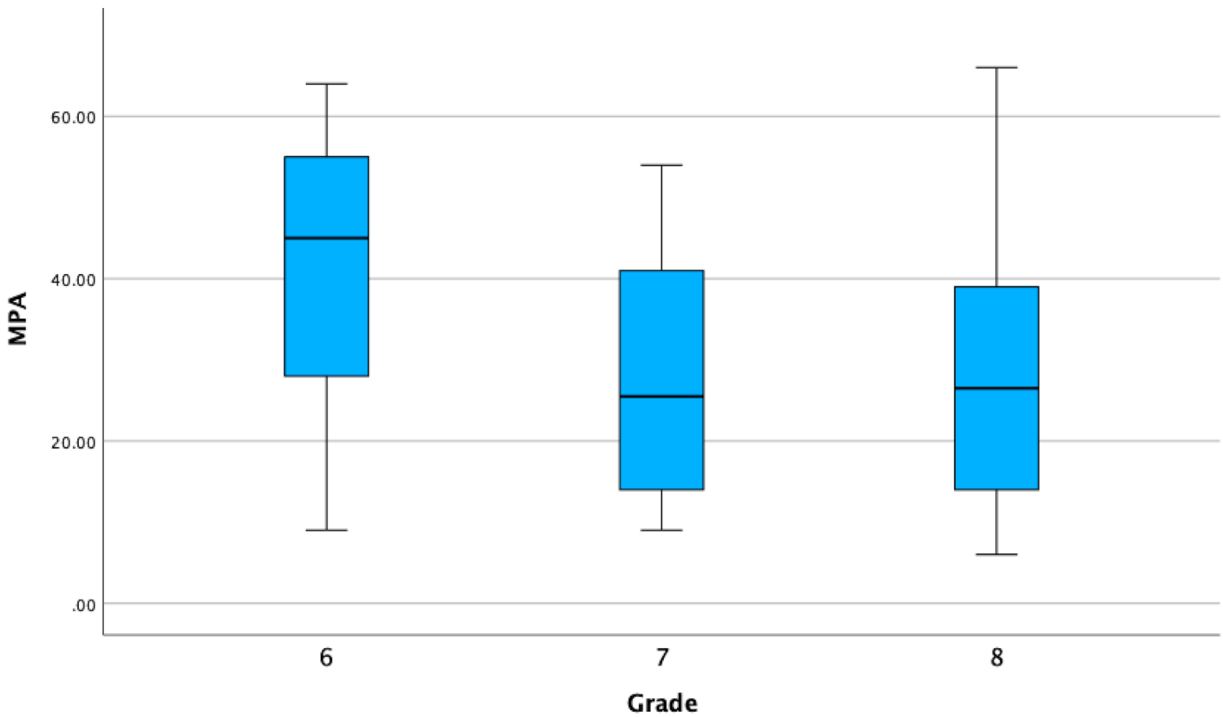
Box and Whisker Plot of MPAI-A Score as Related to Ensemble Type



For 6th grade students, the average MPAI-A score was 41.23, with a low of 9 and a high of 64. For 7th grade students, the average MPAI-A score was 28.29, with a low of 9 and a high of 54. For 8th grade students, the average MPAI-A score was 28.70, with a low of 6 and a high of 66. For quantitative question #2, I had hypothesized that increased age and years of musical study would be associated with lower MPA, and the descriptive statistics support this hypothesis as 6th grade exhibited the highest MPA levels out of the grades. Figure 7 depicts a box and whisker plot showing this data. As seen in this figure, here, too, the maximum and minimum values for each category overlap due to outliers within each grade level, so although I observed lower MPA among sixth graders for this sample, the results were not statistically significant.

Figure 7

Box and Whisker Plot of MPAI-A Score as Related to Grade Level



Descriptive Inferential Statistical Data

In the survey, I also gathered demographic information (e.g. grade, years of playing, type of ensemble) to further explore if these factors might change the prevalence of MPA and be used to predict MPA. Using SPSS, I conducted a descriptive model comparison analysis with the dependent variable of the MPAI-A score, and the independent variables of the type of ensemble, age (via grade level), and years of playing. Using multiple regression, I examined the relationships between MPAI-I score, ensemble type, grade, and years of playing. In this model, the R squared value was .264, indicating that 26.4% of the variation in MPAI-A score could be explained by changes in the factors of ensemble type, grade, and years of playing. With a p-value of .006, this was statistically significant.

MPA Levels as Related to Type of Ensemble. In the descriptive model, only the factor of being in Orchestra was statistically significant compared to the baseline category of Band, with a p-value of .003. I chose Band as the baseline category as this ensemble features the lowest MPAI-A scores, and was the largest ensemble surveyed. According to this model, if a student is in orchestra, one could predict a higher MPAI-A score by 19.29 on average. Table 2 depicts the regression output.

Table 2

Regression Output for MPAI-A Score and Ensemble Type, Grade Level, Years of Experience

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	95.0% Confidence Interval for B Lower Bound	95.0% Confidence Interval for B Upper Bound
1	(Constant)	28.265	6.405		4.413	<.001	15.373	41.158
	Orch	19.296	6.127	.486	3.149	.003	6.963	31.628
	Chor	6.697	5.646	.173	1.186	.242	-4.667	18.061
	Grade=7	-3.693	6.861	-.095	-.538	.593	-17.504	10.118
	Grade=8	-4.726	5.964	-.136	-.792	.432	-16.732	7.280

a. Dependent Variable: MPA

Given the average MPAI-A score for Orchestra students in this sample was the highest at 45.54 (Compared to Chorus' 32.07 and Band's 24.17), this potentially adds support to my hypothesis that MPA would be higher in instrumental versus choral ensembles. However, these results could have been confounded by my skewed sample, as well as not being able to control for all confounding influences, so more studies would be needed to confirm if being in an instrumental ensemble raises the risk of MPA, or if it is just being in a string instrumental ensemble due to my small and uneven sample.

MPA Levels as Related to Age and Years of Experience. In running the multiple regression, it was calculated that a 7th grader would be likely to have an MPAI-A score that is 3.963 points lower than a 6th grader's score, and an 8th grader would be likely to have an MPAI-A score that is 4.726 points lower than a 6th grade student. This said, age was not found to be statistically significant in my descriptive inferential statistics, despite this 6th grade sample exhibiting a much higher average MPAI-A score than the 7th and 8th grades. To compare the grade levels of this sample, I ran a one-way ANOVA by grade and MPAI-A score, resulting in a statistically insignificant value of .075. Comparisons between 6th and 8th grade were .09, 6th and 7th, .126, and 7th and 8th, .997. I then ran a non-parametric test and test of normality by grade to find no significance. Referring to the box and whisker plot for MPA and grade (Figure 7), due to the variance of scores within each grade, the maximum and minimum scores overlap. 6th grade exhibited a distribution of MPAI-A scores closest to a normal curve, partially explaining the difference between the drastic change in MPAI-A average score between 6th and 7th/8th grades and the statistical insignificance of overall grade level as a factor in this model.

Summary of Strand 1 Survey Results

In this sample N = 51, a majority of middle school students exhibited a low to moderate amount of MPA, with a smaller subset experiencing high levels. Additionally, the majority of these ensemble students would rather play in a group than on their own. For this sample, the greatest predictor for a higher MPAI-A score was being an Orchestra student. Ensemble type, age, and years of experience do seem to be factors to consider in predicting one's MPAI-A levels, but none of these factors were statistically significant in the model generated by my results. Within this sample, the wide range of scores resulted in outliers that could have skewed the predictive results of the descriptive inferential statistics conducted. Additionally, factors within the cells were skewed, such as TIS' Band being an older, more experienced ensemble than their Orchestra. Strand 2's qualitative interviews provide more data, and more context for the data collected in Strand 1.

Strand 2: Qualitative Interviews

To answer my third research question, "How do middle school students recognize and describe their experiences with MPA in performances, the classroom, and their own practice," I interviewed 7 TIS students for up to 30 minutes, after they took the survey with me. Out of the 7 participants, 4 were female and 3 were male; 1 was from Orchestra, 2 were from Chorus, and 4 were from Band. This sample had one 6th grader, two 7th graders, and four 8th graders, and the MPAI-A scores ranged from 8 to 65. A table with the demographic information from each participant can be found in Table 1. In line with my IRB-approved interview protocol, I asked semi-structured questions based on the content of the questions in the MPAI-A survey (e.g., MPA factors, manifestations, and resulting behavior) as well as how students deal with MPA (i.e., their own coping strategies, how other people can help, and their advice for other students). These interviews were then analyzed in NVivo using the four directed readings of voice-centered relational analysis, with codes generated after each reading, followed by themes. These codes and themes can be found in the appendix (7.3).

Overview of Interview Themes

Themes arose from the codes generated by my four directed readings of the interview data as well as the themes of the interview questions. Designed as a follow-up to Strand 1's survey, the interview questions further investigated MPA factors (e.g., performance context and environment), MPA manifestations (e.g., somatic, cognitive), the effects of these manifestations on students' performance, behavioral manifestations resulting from MPA-related somatic and cognitive changes, as well as coping strategies. The findings below are grouped based on these a priori categories, beginning with the most universal component of MPA experiences (i.e. what factors contribute to student MPA), then narrowing to the most individual facets; delineating the course of students' MPA experiences (i.e. MPA manifestations, effects on students' performance, and resultant behavioral changes due to these effects,) and finally, how students manage their MPA.

MPA Factors

Guided by the survey questions, my interview protocol further investigated various factors contributing to each student's experience of MPA, including performance context, performing environment, and the student's age and experience level in music.

Performance Context. Across the interviews, the context of the performance seemed to have the greatest influence on students' experiences of MPA, and students were able to clearly describe how and why contextual changes affected their performing experiences. Among the factors investigated in the interviews, performance context held the most consistency in students' preferences. Judged performances seem to cause the most distress for young adolescent musicians as all seven interviewees expressed that judged performances made them the most nervous. Especially considering that the interviews were held shortly after the ensembles' competition in Orlando, every student spoke about their performance anxiety in that judged scenario. The groups all ranked well in the competition, but all of the interviewees compared this competition and other judged performances to an unjudged concert environment, speaking to the musical knowledge and experience of the judges.

> "With these judges, they're just on everything. One person messes up one note, they're on it... I get more nervous when I'm being judged and when people are deciding on me. And

I find myself rarely getting nervous before like, the winter concert or spring concert for parents, or for the teachers, because they don't know, they're not judging us. Yeah, they just think it's good or great or whatever. And that feels good, because I know that they're not going to be judging." - Participant 4

Participant 2 compared their public speaking competitions to the judged musical performance in Orlando, saying:

"In speaking nobody can keep the script, right? Like in music there are judges reading the music, and like, 'Oh, see, they messed up on that part. You didn't get the note right,' you know?" - Participant 2

In each of these quotes, the students speak to the specifically scrutinizing ear of judges, causing an added pressure that may lead to increased anxiety. This anxiety seems to be amplified by the students' perceptions of a watchful, critical audience. While the following quote was speaking about a concert performance, not a formally judged performance, this participant describes similar sentiments of the fear of their mistakes being noticed.

"I was feeling really nervous because there was a big audience and I was on the edge of the [stage] so like people could see me. So like, if I messed up or my fingers messed up then they could see that, and I was really scared that that was gonna happen." - Participant 3

Overall, the students seem to recognize that mistakes are a natural component of musical performance, but they feel a heightened anxiety when these mistakes may be noticed, or when mistakes may have an additional cost in adjudicated settings.

As a result, solo auditions, being a judged performance, seemed to be a performance context that was likely to lead to MPA. Six out of the seven interviewees ranked performance contexts with solo auditions being the most anxiety driven. One participant compared the feelings of a solo audition to a concert, saying:

> "Solo auditions are more nervous than like the concert. Again, actually for a school concert, like everyone's there. And like, you're all just showing people what you can do. But during competition, it's like, [you] did all this for this one thing and if you mess it up now, it's kinda like, you did all that work." - Participant 6

Here, too, this quote speaks to a judging ear versus an audience who is just there to enjoy the music and see what the performers can do. Judges are also listening to see what performers can do, but their opinions hold more weight for these students as judges can give them a formal score or turn them down for musical opportunities, to the point that students question the worth of their efforts.

In response to my follow-up questions, the interviewees then ranked performance contexts in descending nervousness levels. Judged performances were ranked as the most anxiety-inducing, then solo performances, and then group performances were the least anxiety-inducing and most enjoyable. One participant, however, had a slightly different ranking than the other six students, sharing:

> "I think recitals are more nerve wracking versus auditions. Auditions, like it's only like a small panel of judges. And like, really, it's just kind of to get into something else. And then recitals are like actually performing, you're showing people what you can do, and there are more people." - Participant 6

While all students expressed that being formally judged raised their feelings of MPA, across and even within performers, there were some discrepancies between what performance contexts caused the most feelings of MPA. As seen in these prior two quotes from Participant 6, the idea of “showing people what you can do” is encouraging for this particular student for a concert, but discouraging for a solo recital. One contextual factor that was preferred across the interviewees was that all experienced less MPA when performing with co-performers.

Number of Co-Performers. All the interviewees expressed that they were less nervous while playing in a group than playing alone. Part of this sense of a more secure performing experience was due to the support of having performers with the same goal nearby:

> “It just makes me feel more secure with people around, and there's peers that are also there.” - Participant 4
>
> “Playing in the big group is definitely less nerve wracking than playing alone. I think the place where I get the least nervous is probably in band, especially because there's so many other people.” - Participant 6

Participants also spoke to their enjoyment of having more parts to listen to when playing in a group:

> “With the group, it just sounds like-I love the harmony. I love all the different instruments because I can't be a trumpet, I can't be a flute, I can't be a saxophone.” - Participant 4
>
> “Well, I think- I don't really like doing solo all the time. I'd probably rather play with the whole band. So I can hear how the music sounds.” - Participant 5

Additionally, participants shared one major MPA-reducing benefit of playing in a group; that with co-performers, there is less of a spotlight on their own individual mistakes:

> “If you mess up [in a group], you don't really hear it because there's so many people playing with you. But if you mess up by yourself, it's obvious.” - Participant 3

With a reduced perceived focus on their own individual performance errors, students expressed feeling less pressure with an allowance to make mistakes, and more security:

> “In a group, I feel a lot more secure. I feel like if I have a mistake, it's just one person. Right? And the other people will just drown me out. When it's a solo, completely different story. I'm like, "I have to get the notes right. I have to know what I'm doing." I mean, I can't just mess up, right?” - Participant 2

Students’ experiences of MPA manifestations will be outlined in a later section, but it is worth noting here that changes in factors such as the performance environment have effects on how students experience MPA. In these subsequent quotes generated from follow-up questions about how the number of co-performers changed their MPA experiences, students shared that they experienced (and therefore, identified) certain traits of MPA only when performing solo. For example, Participant 1 recognized MPA manifestations when performing solo, but not with a group:

> “Usually when I perform, I only get nervous when I'm alone. Meaning when I have to perform on stage alone or when I'm not with someone I get nervous. But like the more people there are, the less nervous I am. When there's people I know around me, I don't feel that nervous. But every time I'm alone, I get really nervous, like I feel my heartbeat a lot. When I'm alone, I panic a lot just to make sure I get the right notes. But then when I'm with other people, I know that if I get a note wrong, that the other people will, like, support me with it. - Participant 1

In this quote, Participant 1 lists physical and cognitive manifestations of MPA when performing alone, but a sense of security with co-performers. For Participant 4, making mistakes when playing alone was associated with worry, but not when playing in a group scenario:

> “With solo, I'd say it's less emotion and more just focusing and telling myself, "Okay, I need to get this right. I need to get this right." Whereas when I'm still playing in a band, but there's a couple measures where I'm not perfect at it, I love that. I still feel perfect in that, because I know that I still have all my peers around me. And I'm not alone.”
>
> - Participant 4

This sense of not being alone, as well as having other people performing the same part within the music, seems to reduce the performance pressure that these students feel, with a resultant reduction in MPA traits.

Performance Environment. While the environment that a performance was held in seemed to hold less influence than the context/stakes of the performance, students did report changes in their experiences of MPA due to this factor, making the performance environment a factor worth investigating. The type of performance space was one aspect of the performance environment that was discussed. Overall, participants preferred familiar performing environments. For the most part, interviewees favored their ensemble’s rehearsal spaces.

> “Oh, the least nervous, probably in my orchestra room because it's just a familiar space where we've been practicing. But when we're on the big stage, that makes me nervous because it's like, like the audience is there and it's just bigger.” - Participant 3

While the concert stage often means adding an audience (with resultant additional performance pressure), the larger, more formal setting of the “big stage” is a change that drives a different experience for students. Even for a student with a low reported MPAI-A score of 8 out of 84, the room type made a difference:

> “I don't care if people are watching me, but it's more of like the room. Like if it's a really

open room, I don't know why, it just feels kind of weird. And then in that room [the rehearsal space], I just feel really comfortable because it's a pretty enclosed room." - Participant 5

This said, while all interviewees cited a fondness for the familiar space of their rehearsal room, there was much variation across the interviewees in terms of what kind of spaces they preferred for performances. For example, Participant 1 (a vocalist, in contrast to the instrumentalists quoted earlier in this section) preferred bigger spaces:

> "Usually when it's like in a- I'm not claustrophobic-but when it's a small space, I feel like they notice things much more. And so I feel like I need to be much more careful and I need to do better. But when it's like a bigger space, I feel like also with the sound, I can let the sound come out. I won't be too loud, I will be able to project. So yes, mostly open spaces are where I prefer to sing." - Participant 1

Students' preferences for performance environments seem to be individualized, but are pronounced, even at this age and early in their ensemble experience, as students were able to clearly describe what they prefer, and which aspects of environments make them most nervous.

Another performance environment factor discussed was students' audience size and familiarity preferences, and here, too, there were individual differences. Responses regarding audience preferences had a wide variety across the interviewees. These preferences seem to be partially determined by a student's proclivity to MPA, with those with a higher MPAI-A score preferring smaller audiences. Exhibiting this, the student with the highest MPAI-A score (Participant 3; score of 65) preferred an audience size of 15-20. By contrast, the student with the lowest MPAI-A score (Participant 5; score of 8) said:

> "To me, that [audience size] really doesn't matter. I actually prefer big audiences because I feel like the small audience, just I feel like the music will be wasted on a small audience." - Participant 4

Audience familiarity was another performance contextual factor that interviewees disagreed upon. Across the interviews, there were many discrepancies in whether students preferred to perform for (non-judging) strangers or people that they knew. This factor had the most variation among students, and within this sample, it did not seem that student preferences were linked to their inherent MPA, but more so to their experiences of their relationships. Participant 1 ranked that it was easiest to perform for strangers, then their teacher, then people that they know (except for their parents), and the most stressful to perform for judges and their parents. By contrast, Participant 2 favored performing for family, saying:

> "The most nervous is definitely when we have people that are professionals that are there. People that have taught me, judges, people that I know would judge on music. When we are doing a performance where it's just like our parents, our family, I feel a lot calmer." - Participant 2

To summarize students' experiences of performance factors of MPA, the performance context and environment were elements that influenced students' MPA, so changes in these performance factors change students' experiences. Individual differences were present, but all students interviewed prefer non-judged performances, and are less nervous when playing with co-performers in familiar spaces.

Age and Experience. Compared to the performance factors of context and environment, the interview protocol did not have questions that specifically asked about students' age or experience. Rather, age and experience arose in each interview as personal factors that influence students' experiences of MPA. The participants' interviews indicate that as they have grown older and more experienced, their MPA has reduced (to varying degrees). Students cited their first performing experiences as being the most stressful, highlighting 6^{th} grade as a vulnerable time. Much of this increased nervousness in 6^{th} grade seems to be attributable to the fact that for many, middle school ensembles may be their first time performing:

> "I had never done anything similar to it before. It was the first time I was doing something like that. I had never performed in front of anyone. That was like the first time that I'd ever done something like, big in front of an audience." - Participant 7

As an additional stressor, students shared that they felt pressure from comparing themselves to their older peers in the ensemble. As the sole 6^{th} grade interviewee, Participant 1 compared their performance skills to older students with whom they shared a soli at the Orlando competition:

> "The other two people were great, then I was like, "I don't sound good. I don't think I sound good."… you know, and they're older than me. They have a more mature voice; they can project better." - Participant 1

A 7^{th} grade participant reflected upon a similar comparison to their older peers when they were in 6^{th} grade:

> "In sixth grade, I was really young, so I was kind of nervous because I didn't know if I could play with the big kids because then they're going to be much faster than me and stuff." - Participant 3

Participant 7 also shared their experience of comparing to their older peers at their first concert in 6^{th} grade:

> "This doesn't happen anymore, but like, my head hurt a little bit thinking about like, that was my first performance and what would other people think of me? Because other

people had had more experience than me. I had only been doing it since third grade. Some people had been doing it since second or first grade." - Participant 7

For these three students, being the youngest and least experienced as a 6^{th} grader in a 6^{th}-8^{th} grade ensemble led them to compare themselves unfavorably to their ensemble mates, driving MPA.

Age and experience are developmental factors that change with the passage of time, potentially changing students' experience of MPA. As students grow up through the grade levels in the 6^{th}-8^{th} grade ensembles in the middle school music program, they gain experience, which participants recognized as a factor that could lessen MPA. Two participants (with the lowest MPAI-A scores of 8 and 12; 8^{th} grader and 7^{th} grader, respectively) spoke to the role that their increased experience has had in lessening their MPA:

> 'So the first couple of years that I played when I went to a concert, I would be nervous, but now I'm really confident in my skills." - Participant 5

> "So I was more nervous then, and also wondering what it would be like to be in front of all these people, and be like, "Oh, what if I forget everything that I've learned." But after doing like concert after concert, it's a lot easier. I'm finding that I think about that less." - Participant 7

As students' performance experience increased, MPA decreased, and students' satisfaction with performing increased, further lessening MPA. With less anxiety, Participant 7 shared that they could enjoy band more now as a 7^{th} grader in their second year of Band:

> "I know in sixth grade I was like a part of the band, but like, in seventh grade during my winter concert that was like the first time I really felt like I could focus less on like,

having to be better and more about like, the connections I'm that I'm making in band and how I can like look forward, and be a better person in the band." - Participant 7

This reduced MPA also seemed to carry over to increased confidence for their future:

"After my performance, like my first few performances, I felt really confident in myself. I was like, "Oh, well, if I can do this, then I can do so many other things." - Participant 7

It is worth noting that increased age alone did not necessarily drive a low MPA among these students. In this sample, both the lowest MPAI-A score of 8 and the highest score of 65 were held by 8th graders. Rather, students cited lessened MPA as they have aged and gained more performing experience, with reductions in MPA being relative to each individual.

Prior to the interviews, I had hypothesized that age and years of experience would influence the extent to which students describe their experiences, with an increased ability to recognize MPA at the later grades of middle school. In the interviews, I did not find that increased age had much influence on students' ability to recognize and describe MPA, but increased performance experience did seem to affect the extent to which students could share their experiences in the interviews. This said, this amount of performance experience was not necessarily equivalent to students' years of experience. Exhibiting this, Participant 2, a 6th grader reported 6+ years of experience, as did Participant 1, but Participant 2 was able to clearly describe their encounters with MPA, perhaps due to their increased performing experience through theater and public speaking competitions, whereas Participant 1 (who performed in choir and piano, and shared that they did not audition for further opportunities due to MPA) seemed to have a harder time expressing their experiences. To summarize the factors of age and experience, students spoke to a heightened sense of nervousness as the youngest member of an ensemble experiencing performing for the first time, but that these feelings are reduced as they grow through the music program and gain experience.

MPA Manifestations

Students' feelings of MPA were recognized and described by the various somatic and cognitive manifestations of the phenomenon. As my interview protocol was designed as a follow-up to the MPAI-A scale which investigates various manifestations of MPA, several questions directly inquired about these expressions. I had anticipated that students would find it easiest to recognize and talk about physical sensations, and I did indeed find that students were able to best identify and describe the physical sensations brought about by MPA.

Physical Manifestations. All seven interviewees, regardless of MPAI-A score, quickly referenced physical sensations of MPA such as heart racing, trembling muscles, and shaky breath in response to the interview questions. For example, when asked to describe the last time they experienced performance anxiety, Participant 3 shared several physical manifestations:

> "Okay, so it was my last concert. And I was feeling really nervous… I was just like, like moving my legs, because I was kinda really nervous. My heart was racing. I mean, my hands were kind of shaky." - Participant 3

Participant 6, a band player, shared:

> "I think I bite down more when I'm nervous. And I'm more tense." - Participant 6

Across the interviewees, students readily shared physical traits such as shakiness and tension, and the recognition of these physical changes in their bodies drove further manifestations of MPA.

Other Manifestations. Second to physical manifestations, participants also referenced cognitive effects of MPA; primarily worry with comparing to others, worry with what listeners would think, and an increase of negative self-talk, including cognitive distortions such as catastrophic thinking. These thoughts seemed to distract students and make it harder to perform the cognitive actions needed to play music.

"It's just all about nerves. Yeah, it just makes your brain all scrambled." - Participant 3

Mostly, students referenced these MPA manifestations in conjunction with physical experiences. In talking about their MPA during the Orlando competition, Participant 2 shared both physical and cognitive manifestations of shaking, tense muscles, negative self-talk, and catastrophizing:

> "We had a huge bus ride, and I was so nervous. Even before I was like completely shaking before I got in there. Like my muscles were tense, and I was like, "Oh my God, what if I mess up?" because I also had a tiny solo part with three other people, literally the higher soprano part. And I was like, "What if I mess up?" So I was nervous… There's always a little voice in the back of my mind saying, "Oh, you're gonna mess it up. And if you mess it up, it's over."" - Participant 2

In talking about going into an audition, Participant 5 shared that their physical manifestations spurred negative self-talk:

> "I'm just, that's like when my breaths are just kind of quivering. And I'm like, "Okay, don't mess this up." And I'm just repeating that in my head." - Participant 5

Each participant shared an individual response to MPA, experiencing some combination of physical and cognitive effects, but all primarily identified physical manifestations with the most common being increased heart rate and shakiness in their bodies and breath.

MPA Manifestations' Effects on Performance. While the manifestations of MPA were different in type and severity for each participant, all the participants talked about MPA's negative effects on their playing. Participant 4, a band player, cited a physical manifestation's detrimental effect, saying:

> "Because since I breathe a bit faster when I'm nervous, I get less air and I tend to run out of air a bit faster. Which is not good for slow pieces." - Participant 4

The physical experience of shaky breaths also affected Participant 2, a choir member:

> "When I'm nervous, yeah, and I'm singing a solo, my breath becomes shaky, or my voice becomes shaky." - Participant 2

As evidenced by these quotes, physical manifestations make the act of performing more difficult. Students also reported that cognitive manifestations of MPA caused them to make technical errors in their music.

> "Sometimes I mess up because I'm sure I'm too focused on trying not to mess up that I actually do end up messing up." - Participant 3
>
> "Yeah, it's already difficult [to distinguish notes with ledger lines], it already takes me a minute, but when I'm nervous, that's even worse." - Participant 4

Due to this, when asked what they would do if they never struggled with MPA, students felt that their playing would be improved as a result of the removal of the cognitive manifestation of worry surrounding judgment:

> "I think I would play louder because I don't really play loud, actually. Because playing loud and messing up is much worse for me than playing quiet and then like messing up because no one can tell then. [So] I play softer when there's an audience." - Participant 3

And the removal of the physical manifestations that MPA causes:

> "I mean, it would be amazing. I would play so much better. So much better, especially when I'm playing alone. I would just be- I would sound great because I sound really good

when I'm not nervous or breathing faster, out of air or anything, but when I can play, I can play!" - Participant 4

Beyond improved performance, participants shared that they would enjoy the act of performing more if they did not experience MPA. Participant 2 noted that their performance would improve with reduced MPA, and that this would boost confidence.

> "If I had no nervousness before or during a concert-during the concert, I would probably project a lot more… I would definitely probably project because I wouldn't care what people would think, right? And I think all of us would just have confidence. Because half the time if the choir doesn't have confidence at all, it just sounds sometimes not good, because some kids are completely silent. And it just sounds like a really tiny choir. So I feel like we would all have more confidence, I would have more confidence. But not only in our music, but in ourselves too." - Participant 2

Timeline of MPA Manifestations. I asked participants to describe their manifestations of MPA in part to investigate changes across the timeline, from pre-performance to after the performance. All of students interviewed shared that they experienced the most nervousness in anticipation of performance, with MPA manifestations at their peak at the start of performances.

> "It's definitely more beforehand. I'm more anxious beforehand than during the performance." - Participant 6

In a follow-up question, when I asked them if this anxiousness goes away during the performance, they responded, "It dims."

Flow. The dimming of MPA during performances that all seven students reported describes the phenomenon of flow. In discussing the timeline of MPA manifestations, every student revealed elements of flow coming after their physical and cognitive MPA manifestations in anticipation of and at the start of performances. Interviewees shared that at some point after the initial performance anxiety, they are completely immersed in and enjoying the act of making music, to the point of forgetting anxious thoughts and sensations.

> "Because once I start performing, I focus more, and I'm less like, jittery I guess as I was saying before. Because when I'm playing, I'm more focused on the music rather than what I'm thinking. So really, when I'm performing, I'm only thinking about the music." - Participant 7

While other participants divulged flow experiences, Participant 5 actually referenced flow by name when I asked if there was anything a teacher had done to help him with MPA:

> "No, I just created my own kind of thing to make me stay in my flow." – Participant 5

This participant later described how being in a flow state seems to counteract MPA:

> "I am [nervous] at the start. If there is like a little mess up, then yeah. But then during the middle of performance, I'm just thinking about so much stuff. Like talking to myself and playing, that I don't really have time to worry." - Participant 5

Participant 1 shared that they had been trying to figure out this phenomenon:

> "So usually it's at the start where I get nervous, but when I'm in the middle-I kind of, like, realized this just recently, that I don't really like, think of anything. I just, I sing, and I just go with it. Like, I'm in the song. - Participant 1
>
> "Actually, what I realized is that when I do things that are like nervous or I have to talk in front of public, I get nervous before doing it. And then while I'm talking or while I'm singing, it gets-I don't feel that nervousness anymore. - Participant 1

When asked to describe more, Participant 1 shared:

> “That's what I've been trying to notice. It's just like, I get nervous and then I start and then I realize that I'm not that nervous anymore. Like I'm singing already, so I might as well just continue.” - Participant 1

Participant 2 shared their timeline from MPA preceding performance into flow in great detail, exhibited by a high level of nervous self-talk before performing and then a focus on and enjoyment of music:

> “So yeah, before I perform, I'm nervous, right? I'm thinking, "Do I have everything I need? Am I dressed properly in concert black?" Right? "Do I have what I need?" Then I think, "Did I warm up properly" Right? So all this stuff going in my head. And then when we have our final run through before the performance, I think, "Oh god. Oh, these people messed up on this one note" or "Oh, no. Did we sound okay? Does [their choir teacher] think we sounded good?" "Oh, we didn't sound as good as our other run through a couple days ago." So I start comparing in my mind. As I'm performing, my brain is just completely, like, straight into the music. I literally drown everything out and it's just me, my choir, and the music. And that's kind of why I have such a big, like, passion for music.” - Participant 2

While all participants spoke to experiencing flow and a resultant reduction of MPA in their most successful performances, student experiences differ after the performance. For some, there was relief and pride, but some spoke to making comparisons (especially in a judged performance) that made them worry if their performance was good enough. Overall, students displayed similar manifestations of MPA, primarily physical traits, and a shared timeline of MPA manifestations, with a peak in MPA before and at the start of performances before a reduction to a flow state.

MPA Behaviors

In response to my questions, students shared how their MPA manifestations had further effects on their behavior. For some, MPA caused them to avoid performance opportunities. For others, MPA led to them approaching the performance more and working harder, but perhaps over practicing.

Avoidance. MPA caused some students (especially those with higher MPAI-A scores and/or greater expressions of MPA during the interview), to avoid musical situations that might expose them to their fears. Participant 1, with a below-moderate MPAI-A score of 37, revealed that they avoid competition opportunities and do not want to audition for solos.

> "But um, a few times I could have done like competitions, but like, it's just-I'm really nervous doing those specifically when there's like judges watching me and then like, I could be doing something wrong and then they realize. It's just a big part of it." - Participant 1

When asked what they would do if they never struggled with MPA, Participant 1 then shared:

> "I would do many more things. I would participate in like, being able to present things. I would take so many more opportunities when I'm like just doing solos in songs. I'd actually try. But I'm way too nervous now."- Participant 1

Through avoiding potentially nerve-wracking situations, students can reduce the frequency of their experiences of MPA. However, avoiding these performances also reduces the amount and types of performance experience students can gain, and closes off opportunities.

Approach. The students who came off as the least affected by MPA (and had the lowest MPAI-A scores of 8 and 12), shared behaviors of over practicing in response to MPA.

> "Well, I think about like, how my conductor is gonna think. So when I over practice, I just spent like, way too much time. Like, going through the things that I'm bad at." - Participant 5
>
> "So um, I normally practice on like, Wednesdays and Saturdays. So, like I'll practice before school on Wednesdays, but like, if there's a concert coming up, then I'll be practicing like every single day for like two hours straight. I feel like I over practice a little bit like the three weeks before." - Participant 7

Students may feel more control over the situation as they increase their work efforts, over practicing can cause negative physical effects and increase anxiety. While students' behaviors can generally be broken down into avoidance and approach efforts, students' chosen behavior reflects their individual reaction to their unique experience with MPA. With repeated behaviors, students may solidify self-limiting beliefs in avoidance, or risk future performing capacity in approach behaviors.

Coping With MPA

After investigating what drove students' MPA, and how they experienced the phenomenon, the interview protocol expanded from the survey questions to investigate how students cope with MPA. In response to my interview questions, all of the students shared some sort of coping strategies that they had developed with outside help from their teachers or on their own. This information was also uncovered through a question asking students what advice they would give to other students in working through MPA.

MPA Strategies from Teachers. A few students were able to cite coping strategies for MPA that they had learned from their teachers. Participant 2 shared that their ensemble teacher told them to "fake it 'til you make it" and provided verbal assurance to students by saying "You know your music. If you forget anything, it's okay. Just try following with the other people." This said, most of the teacher-taught strategies seemed to come from private teachers, as opposed to ensemble teachers.

> "So I did the All-State audition. And when I was preparing with my private teacher, we talked like a lot about anxiety. And they taught me how to prepare beforehand. Like, just do breathing exercises. Listen to calming music, and like beforehand, don't worry about it or stress too much… And just getting enough sleep before." - Participant 6

The teacher-taught strategies that students cited were simple and practical, and largely addressed MPA in the moment. For many, the interview was the first time that they had talked about MPA with an adult, and when asked about coping strategies, students primarily shared methods that they had developed independently.

Individual Coping Strategies. Most of the coping strategies mentioned in interviews seemed to be ones that students came up with on their own. Due to this and individual differences in MPA, answers greatly varied across participants. Participant 5 had the lowest MPAI-A score and shared their strategy:

> "I just try drowning out the anxiety by just thinking about the music or how the rest of the band sounds. And normally, it works really well." - Participant 5

Their advice for other students mirrored this:

> "I just say drown out your thoughts, then like focus on the music. And if you're confident about your music, then nothing's really gonna go wrong. Because I mean, for me, nothing has gone wrong because I know my music." - Participant 5

This said, they admitted that this might not work for others:

> "Ah, well I mean, I feel like I handle it differently than other people. Because like some people in my band say they're really scared. And like, I don't know what they do to handle the nervousness." - Participant 5

By contrast, the participant with the highest MPAI-A score, Participant 6, used a mix of positive self-talk and breathing:

> "Yeah, yeah, kind of like, "Okay, okay, you messed up, but it's fine. Go on to the next part, it's fine." Like when I have like a rest or anything, I recollect myself. Breathe like *deep breath in and out*, like that." - Participant 6

While students' coping strategies varied, focusing on breathing, concentrating on the music, positive self-talk, and reflecting on one's preparation were the most cited strategies. Participant 7 reflected that breathing helped to ease their MPA manifestations of over thinking and negative self-talk:

> "Well, when I overthink, I'm like, "What if I do this, what if I do this?" "What if I do this," and then I'm just like, "Oh, no, what will they think or what will the rest of my ensemble think?" But then after breathing, I'm like, "No, they're not gonna think that much." - Participant 7

Students independently came up with several other strategies to coach themselves through MPA. Participant 1 used positive visualization:

> "Oh, I usually tell myself it won't take long. Also, I like, imagine the scenario of me already being on stage and doing well, and that people will like it, and even if they don't like it, that I might as well just do it because I'm already here. It's just like, I'm already on stage, and if they don't like it, they don't like it. But I'm gonna sing or I'm going to play piano no matter what." - Participant 1

Participant 2 shared that they look at the stage lights or something to not focus on looking at the audience. They also referenced consciously changing their self-talk to be more positive, as well as breathing.

> "Well, normally, I just try to calm my train of thought. And like, I sometimes-I know this sounds very weird, but I just kind of tell that little voice to just "Shut up, I'm performing." I don't listen to it, right? It's like some annoying kid. And, you know, it's like this kid has been talking to you forever. And at one point, you just drown it out and you're like "Eh, I don't care anymore." So that's kind of what I imagine. So, to calm down my train of thought I really just try to relax and breathe and tell myself, "I'm going to be great." Yeah." - Participant 2

Participant 4 also coached themselves through MPA and cognitively reframed, along with focused breathing:

> "Take some deep breaths. Remember that you're not alone. If you're in a group, remember that there are other people there who are in your shoes, who are probably feeling the same thing. And then think two things. These are the main things I use. Number one, what's the worst-case scenario? Oh no, you mess up a note. Oh no, is the world's gonna end? You're gonna get kicked out of the ensemble? No. And then think what's in your control? What can you do to affect any of this outcome? If there's nothing really that you can do at this point, then don't worry, because you've done everything you can. The rest is outside your control." - Participant 4

Focusing on a component of performance within students' control, several students spoke to the importance of working hard and preparing your music well in order to combat MPA:

> "Maybe if you're worried about like, how well you're going to play and that you didn't work hard enough-maybe just like, if you're not already practicing, like a lot, then practice." - Participant 7

Participant 2 echoed the importance of effort in preparing the music, and gave advice for students to:

> "Just try your best. To know that you've been practicing. To look back on everything you've done, and think, "Look at how much I put into this." If you haven't put anything into it, well, then you should be nervous. But if you've done everything you can, if you have tried super hard, and you're doing this, then I think that should definitely calm you down. Because you're like, "I've spent so much time doing this. I know this." - Participant 2

As students shared that they came up with these coping strategies independently, there was a wide variation of approaches. Students revealed that they were unsure of what to do, or what others do to cope with MPA, as they had never talked about MPA. In the interview, several students expressed relief in talking about MPA with me, as for many, they had not shared before, or only with a trusted adult like their private teacher.

> "So I think, just that private teacher. I don't think I've talked about performance nerves with anyone else, really." - Participant 6

Participant 7 recognized the potential for talking about MPA to help, and suggested that students talk about their MPA with others in order to ease it:

> "Talking about like, how you're feeling and how and why you might be feeling that. That's been like, really helpful for me. I'll just talk to my friends beforehand."
> - Participant 7

Communicating about MPA with peers and with trusted adults may help to normalize and mollify MPA, and also aids in building relationships that support students through their experiences of MPA.

Relationships in Music Learning. One common theme that arose in the interviews and seemed to have the potential to provide MPA relief for students was the relationships that they formed in music learning. Primarily, participants spoke fondly of their ensembles and expressed a sense of belonging and responsibility to their ensemble-mates.

> "But over time, we all became like a little family, like a little group. So it was like we're all helping each other learn." - Participant 3

Other relationships that seemed central in how students experienced MPA were those with their parents and their teachers. Here, it became apparent that a sense of support from these adult models was crucial to set up for a successful performance.

Parents. Participants differed on whether performing for their parents made them more nervous or less. This said, students' perception of their parental support was key to them feeling confident in performing, and affected whether they felt comfortable performing in front of their parents:

> "Well, my parents-like most of the time, when they come to my concert, they're really impressed with the music. So I'm like really confident performing in front of them. So that doesn't really make me scared." – Participant 5

Or not:

I'd say for concerts, I get slightly nervous seeing my parents there because I know that they are pretty judgmental in that sense, like they would definitely make comments about it.” [6]

Sadly, for the previous participant, their sense of a lack of support from their parents within music affected their learning process as well:

“I did feel slightly discouraged by my parents as well when I was auditioning for All-State and District Honor ensemble because when I would practice and practice, my parents didn't think it was very good. They didn't think I was practicing enough, and then I made the District Honor ensemble. I just barely didn't make the cut for All-State sadly, but my parents-I didn't feel like they believed in me very much and so that made me really sad and didn't motivate me. But at the beginning, they just didn't think I was doing enough. They didn't think I was practicing enough, didn't think I was good enough, thought my music sounded too sloppy.”

Teachers. Just as participants differed on how they felt about performing for their parents, for some, they felt more comfortable performing for their teachers:

“So [with] my teacher I'm not nervous at all because I know they've heard me sing. I know they know my experience, specifically with my, like, vocal range. I think it's like, because I know it's my teacher. And I know my teacher knows my voice, knows how I sing, so I know it's not gonna be that bad.” - Participant 1

For others, their respect for their teacher’s musical knowledge made them more nervous to perform for them. Participant 3 shared that they were not nervous to perform for their parents, but they were for their teacher, describing the additional knowledge that their teacher held:

[6] Potential identifying information has been redacted due to sensitive nature of these quotes.

> "I do get nervous because it's like, the people that you look up to or you want to impress, it's really like, you don't want to mess up at all. So it's kind of nerve wracking. My parents kind of less because they don't know what we're supposed to sound like, so I don't care. My teacher, they know what it's supposed to sound like so if I mess up, she can tell, yeah." - Participant 3

Regardless, again, the students' sense of teacher support was vital to lessen MPA. Going into the Orlando competition, one participant[7] did not feel this support:

> "Now we had been told for a while that we were doing well and stuff but our director had told us, "Well you guys might get a silver, but if you don't do all the accents perfectly and all the stuff like that, you're gonna get a bronze, easily" And so I was really nervous going in, I was like, "Okay, well, if they don't believe in us, can we even do it?" So that's the most nervous I've been, I think. We ended up winning gold. But yeah, I was pretty nervous at the beginning. I felt like our director didn't think that we were as good as we actually were. That we were good, but they didn't think that we were great. And we turned out to be great and won gold, and we helped win best overall school."

While this participant did not feel support from their director for this competition, they did cite their director as someone who has helped them with their MPA, highlighting the importance of continual teacher support for students:

> "My director has been really encouraging me and they've believed in me a lot. So I'd say that has really helped me."

Participant 2 also felt more confident due to their teacher's support before performances and in preparation for the performance, with this trust reducing their MPA.

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[7] Potential identifying information has been redacted due to sensitive nature of the quotes.

> "Definitely assurance before it. And also, I like the fact that I know they're my teacher. So I know they taught me well, right? So I know that I'll be pretty good on stage. So that's how I feel." - Participant 2

Participant 2 also spoke to the power of teacher support for music learning and performance:

> "I know that they're proud of us regardless, because of all the work we put into this, especially for Orlando. They addressed the fact that they know how hard we worked. And even if we don't win, even if we're not even competing, but we're just participating. They always tell us how proud they are of us for a good job and that's what I really like about it. Because if you have a teacher who's always pointing out the mistakes, you're never gonna get anywhere. I'm sorry, but you've always got to be positive." - Participant 2

Further, several students, such as Participant 7, cited their teachers as reasons for them to push through MPA and keep learning music.

> "I also think that my ensemble teacher and my private teacher-they're really a big part of like, why I do music, or why I'm continuing to do it. Because like, obviously, if I didn't have a good teacher, then I probably wouldn't continue with music." - Participant 7

Students shared that their relationships with their peers in ensembles, their parents, and their teachers affected their experiences of MPA. As a key finding, the support that these relationships can provide can be crucial in combating MPA and continuing musical learning.

Students' Relationships With Music. As another emergent theme, students' relationships with and identities in music served as a protective barrier against MPA. In the interviews, students' musical passion seemed to act against MPA. While not a coping strategy per se, many students spoke to their love of music as a motivating factor to keep performing, despite the nerves that may come with it. Participants shared that music was fun, enjoyable, a way to express themselves, something to be proud of, and a class that they looked forward to in their school day.

> "Sometimes I'm like music is the only thing that keeps me going somedays. Because I'll have like so much work or I have like a bunch of bad classes that day, and then I'll go home, and I'll practice and then feel so much better." - Participant 7

For many, this passion for music resulted in excitement in sharing their work with an audience during performance.

> "I'm like, "Oh, I'm finally doing this." Everything I've done before is like, this is what I've been waiting for this entire time. I wouldn't not want to do this." - Participant 7

Participant 4 echoed the sentiment of the rewarding feelings that can come about in sharing music with others in performance:

> "It makes me feel great performing in front of other people and getting to show the music because I just love the sound of success in the music. I don't love it when I mess up. It kind of makes me cringe a bit inside. But when I get stuff right and when the band gets stuff right, it just feels amazing. It's such a good feeling, especially seeing the audience's faces and all-that that's why I do it." - Participant 4

Before I even asked any questions about MPA, Participant 2 shared that while performing can cause nervousness, that their passion for music inspires them to persevere.

> "I do music mainly because I have a big passion for it. I really love it. Even though sometimes it's nerve-wracking, or you feel like you can't do it, I mean, you just go back in and then you realize why you did this, what all this was for, why you love music."
> - Participant 2

Summary of Strand 2 Interview Results

Overall, regarding factors contributing to student MPA, the context of the performance seemed to be the greatest determinant. Students shared the most consistency in their preferences for the performance context, as most interviewees were most anxious for judged performances, and experienced less anxiety with more co-performers. There was much variability in which performing environment participants preferred, but all shared a sense of greater comfort performing in the familiar space of their ensemble's rehearsal room. Interviewees from all grade levels shared that increased performing experience has eased their MPA (to varying degrees), citing the most nervousness in their first performances. Participants outlined various MPA manifestations that were somewhat unique to each individual and each context, but most found it easiest to identify and express physical manifestations. Due to the manifestations reported, participants shared avoidance behaviors such as not taking auditions, or approach behaviors such as over practicing. Students were able to recognize and share effects that MPA had on their performances and on their future behaviors. In coping with MPA, students shared some strategies that they learned from teachers, but largely had their own strategies. While not strategies per se, the relationships that students formed in music learning; that with their peers, their teacher, and their own relationship to music, helped students in coping with MPA.

Strand 3: Integration of Quantitative and Qualitative Data

In Strand 3, I integrated the survey results (N = 51) with the interview results (n = 7). While combining the quantitative and qualitative data, I also incorporated tacit theories of musical performance, learning, and identity to further explore students' experiences of MPA. In this strand, I could make direct comparisons between the quantitative and qualitative data for the 7 participants who had turned in the study permission forms and therefore took part in both strands of the study. In many ways, this served to add to the study as I interviewed some students who I likely would not have selected based on their scores; uncovering both areas of confirmation when integrating the QUANT and qual, but more interestingly, areas of contradiction between the data collected.

Confirmation Between QUANT and Qual

In several ways, the interview data gathered corroborated, and added insights to, the results from the survey. In the survey, the question of, “I would rather play/sing in a group or ensemble, than on my own,” had the most notable results with 16 students out of 51 (31.37%), selecting “6-all of the time” and 29 (56.86%), choosing a selection that was “more than half the time.” The interviews supported this as every student interviewed spoke about how they prefer performing in a group than solo, and are less nervous performing with more co-performers, especially peers on their same part.

Another alignment was that age and experience are mitigating factors of MPA. While grade and experience were not statistically significant in the model of the survey data, descriptive results show that 6^{th} grade participants had the highest MPA scores (41.23 average, compared to 28.29 average for 7^{th} grade and 28.7 average for 8^{th} grade). This was exemplified in the interviews by one 7^{th} and one 8^{th} grader who had the lowest MPAI-A scores out of those interviews (12 and 8, respectively). Participant 7, a 7^{th} grader, is primarily excited for performances now, but spoke about how they were “very, very nervous” at the time of their concert in 6^{th} grade. They reflected on this growth, saying:

> “Now that I can see how much I've grown, I can be like, "Oh, well, I know that I need to work on this and this and this,” but I know what I need to work on. So, it motivates me to like, move forward, I guess.” - Participant 7”

Additionally, while increased experience may lessen feelings of MPA, a student’s original MPA manifestations may still show up as they grow older and more experienced, but in new circumstances that they have not experienced yet, as seen in Participant 5’s quote:

> “So, the first couple of years that I played when I went to a concert, I would be nervous, but now I'm really confident in my skills. So, I don't really get that trembling in my muscles or something. But like, what I talked to you about in Orlando, since that song kind of started off-like my muscles started trembling, but that was it.” - Participant 5

Tacit Theories. Several of the aligned findings between the quantitative survey and the qualitative interviews are backed by theories regarding music performance, learning, and musical identity.

Music Performance and Learning Theories. In answering the questions, “Describe the most recent time you got nervous while performing,” and “Describe what goes on in your brain when you perform,” interviewees demonstrated both Eysenck and Calvo’s (1992) processing efficiency theory and Baumeister’s (1994) explicit monitoring theory. Processing efficiency theory describes how anxiety-driven thoughts detract from a performer’s working memory during performance, thereby distracting the performer (Eysenck & Calvo, 1992). Participant 6 shared some of the effects of these anxiety-driven thoughts when they answered, “Describe what goes on in your brain when you perform:”

> “I think I like forget some details, sometimes when I'm performing for other people.
> I kind of like, forget about them, or just like ignore them. Then I focus more on the more basic stuff, because, like at that moment, that's more important to me, and it's kind of hard to prioritize.” - Participant 6

Participant 2 also reflected on this in their own performing when giving advice for other students:

> "Participant 2: Don't psych yourself out. Don't. When you psych yourself out, things are just going to become worse. It's not going to be good. And after you're going to be like, "Why was I so nervous?"
>
> Katie O'Brien: Has that happened to you? Where you've psyched yourself out?
>
> Participant 2: Yeah. Like, why have I psyched myself out about this? Like, it's not that bad. So always think- in the future, am I going to look back and think, "Oh, I was nervous. I shouldn't have been. That might have changed my sound."

Most of the interviews were focused on performances that were well-prepared (sight-reading only came up in one interview). Therefore, the mistakes in performance that were described can be explained by explicit monitoring theory (Baumeister, 1994), where errors occur in well–trained actions when they are monitored due to anxiety. Participant 3 exhibits this in the following quote:

> "Because we practiced so much, I don't think I have an issue concentrating as much as like really focusing on not messing up… Sometimes I mess up because I'm sure I'm too focused on trying not to mess up that I actually do end up messing up." - Participant 3

As students' behaviors due to MPA were uncovered in the interview, students described approach behaviors such as over practicing and avoidance behaviors such as turning down performing opportunities, perhaps due to their underlying approach or avoidance motivation (Elliot, 2006). In these actions, these students are potentially forming early maladaptive schemas in line with Young's (1990) schema theory. With repeated behavior in these maladaptive coping mechanisms, this could further reinforce students' negative self-beliefs and identity as musicians.

Music Identity Theories. Students' passion for music clearly came through in the interviews and seemed to be a source of inspiration to push past feelings of MPA. Participants expressed that this passion for music was also a part of their identity.

> "Because just like the thought of music is something that like, helps me go forward every day. It's a big part of my life. I don't think I would-I don't even know if I'd be that happy without it. I didn't know that it was something that I needed until it was something that I had." - Participant 7

This musical identity seemed to serve as a protection against MPA, and is formed over time through musical experiences as students develop self-worth and self-efficacy in their musical abilities. In line with Covington's (1984) self-worth theory, students seemed to gather worth from others' approval (namely, their music teachers and judges) and on their efforts, ability, and performance in music. Due to MPA, some grew averse to risking failure (i.e., auditioning for solos) in efforts to preserve their self-worth (Covington, 1984). However, many of the students interviewed shared that they would reflect on the self-worth that they had gained from the effort that they had put in to learning their music as a way to calm their nerves, and advised other students to do the same:

> "Practice like, at least once a week and then you can think, "Well, look at all these weeks that I've worked on this." It's about the practice and effort that you put in." - Participant 7

This self-worth in music is partially built through increasing one's musical self-efficacy. According to Bandura's (1977) self-efficacy theory, self-efficacy is built primarily through mastery experiences. While music performance can cause nerves, such opportunities can serve as mastery experiences through which to gain self-efficacy in music. Students spoke about how their confidence increased with successful performance experiences as evidence of their abilities.

> “I do often worry, like with the audition for All-State for months before I was worrying, stressing like, "What am I going to do, what am I going to do?" But I mean, that all kind of half dissipated when I made it past the first round. I thought "Wait, I actually have a chance at doing this." - Participant 4

Partially due to the recency at the time of interviews, students spoke very proudly about their ensembles’ successful ranking in the Orlando competition as a mastery experience.

> “After the performance, it kind of feels like a big weight being just taken off of you like, "Oh, this is everything we've worked for, and it's finally done. And now we can just relax and get back to our music." And that's it. It was such a great feeling after we did the performance in Orlando. Not only because we did so well, but we were like-we had been preparing for this for months, you know? Since like December, we were doing things, and we were working on our music, and the people there were just so amazing, too. So it was just a wonderful experience and I felt pretty good.” - Participant 2

The self-efficacy and resultant self-worth that can be built through masterful musical experiences are vital for students to have the courage to push past MPA and approach musical opportunities, further cementing a musical identity. Students who have lower self-efficacy for music may avoid opportunities, such as Participant 1 avoiding auditions for solos, while those with higher self-efficacy and self-worth in music (i.e., a stronger musical identity) are more likely to pursue such opportunities, like Participant 2 auditioning for solos despite admitting that they are most nervous for that performance situation:

> “Yeah, I know that worry is a normal part of this. And the majority of the time it ends up pretty well. Even if I don't get the solo. I'm like, "Okay, well, I'm still performing right?"” - Participant 2

Another major facet of self-efficacy is verbal and social persuasion (Bandura, 1977; Zelenak, 2019). Participant 4 shared that verbal persuasion from their music teacher encouraged them to try out for an honor ensemble.

> “My director has been really encouraging me and they’ve believed in me a lot. So I'd say that has really helped me… I'd say my band director helped me come through and decide, you know, "I can do this. I'm going to do it." Yeah, because I was planning on not auditioning for All-State.” - Participant 4

Through the support of verbal/social persuasion and the mastery experiences of successful performances, students grew self-efficacy and self-worth in music, bolstering their musical identity and resultant resiliency against MPA.

Contradiction Between QUANT and Qual

The main discrepancy between Strand 1 and Strand 2 was that of students’ MPAI-A scores and their interview results, particularly with male students. Two of the three male participants had low MPAI-A scores (Participant 1, MPAI-A score of 37; Participant 4, MPAI-A score of 12), so going into their interviews, I expected that they would not be struggling much with MPA. Then in their interviews, it became apparent that both students indeed struggled with MPA, to the point of not taking auditions, or only taking auditions at a teacher’s urging. Furthermore, both male students reported more cognitive manifestations of MPA in the survey, not somatic, but then in their interviews, they talked about physical sensations of shaking, heart racing, and hyperventilating, much more than they talked about cognitive manifestations of worry or issues focusing.

By contrast, most of the female participants scored much higher on the MPAI-A (51, 52, 65) but in the interviews, MPA seemed to affect these students less than the two male participants described in the prior paragraph. My last interviewee, Participant 7, was female with a score of 12, like male Participant 4. Participant 7's attitude toward performance anxiety was much more cavalier than Participant 4, and aside from some nervous excited energy, she reported no physical manifestations in either the survey or the interview.

In summation, the integration of quantitative results and qualitative results indicate that students' experiences with MPA are highly individual; based on much more than a combination of their gender, ensemble, age, and years of experience. For example, as the sole participant who both sang and played an instrument, Participant 1 shared that singing made them more nervous than piano, despite the fact that piano performances are typically solo.

> "It's just more stressful when singing, yeah. Because it's really personal to me, like because I'm using my voice." - Participant 1

As a result of this finding, in regard to my hypotheses surrounding demographic factors and students' abilities to recognize and describe their experiences with MPA, I found that age, years of experience, and type of ensemble had little to do with students' abilities to communicate their experiences. Rather, students' abilities to share their experiences of MPA were most affected by their own individual qualities. In particular, students' individual experience of MPA seemed to have the most effect on their recognition and descriptions of MPA, and students who had greater experiences of MPA had a somewhat harder time sharing these experiences in the interview. Both the confirmatory and conflicting findings between the survey and interview data integrated in Strand 3 of my study have implications for music education, and for further study in this area. This will be discussed more in the following chapter.

5. DISCUSSION

This study investigated the prevalence and experiences of music performance anxiety (MPA) in young adolescent students at a private school in the southeastern United States, Terminus International School (TIS). This investigation was conducted through an explanatory sequential mixed methods design, assessing the prevalence of MPA through a survey with a validated scale and exploring the students' experiences with MPA in semi-structured interviews. As this age group has not been adequately represented in MPA research to date, this study was an early step to learn more about the phenomenon of MPA in young adolescents, with the aim to inform teachers working with these students and reduce the potential stigma surrounding MPA among students. This final chapter presents a summary of the methods utilized, conclusions based on the data collected and analyzed, implications for music education, and suggestions for future research in this area.

Summary of Methods Utilized

With both quantitative and qualitative research questions, this study was conducted using an explanatory sequential mixed method design (Creswell & Plano Clark, 2018), which features a quantitative Strand 1, a qualitative Strand 2 (i.e., QUAN → qual design), and a third strand combining the prior two strands (Tashakkori et al., 2021). Quantitatively, for Strand 1 of my inquiry, I assessed the prevalence of MPA in (N = 51) of TIS's middle school music students with a survey containing the validated Music Performance Anxiety Inventory for Adolescents (MPAI-A; Osborne & Kenny, 2005) and demographic information (i.e., grade level, years of experience, type of ensemble). The data were analyzed in SPSS using descriptive statistical analysis and descriptive multiple regression analysis. In the qualitative Strand 2, I conducted semi-structured interviews with 7 students in order to expound upon the quantitative results in

Strand 1. The interview data were coded and analyzed in NVivo using voice-centered relational analysis (Mauthner & Doucet, 1998), with inductive codes and themes generated through four directed readings of the data. Then, in Strand 3, I integrated the quantitative and qualitative results, linking the findings to tacit theories, particularly theories regarding musical identity (e.g., Bandura's 1977 self-efficacy theory and Covington's 1984 self-worth theory) to support my research findings.

Conclusions

In analyzing the quantitative and qualitative data collected at TIS, my three research questions were answered in the context of this middle school's sample at this time. For question #1, (What is the prevalence of MPA in grades 6-8 at a private school in the southeastern United States according to the Osborne-Kenny MPAI-A scale?), I hypothesized that a majority of middle school students would experience a low to moderate amount of MPA as measured by the MPAI-A scale, with a smaller subset experiencing high levels. The data supported my hypothesis as this prevalence was seen in this sample ($N = 51$). The mean MPAI-A score for the students surveyed was 31.78 out of a top score of 84, with a range from 6 to 66. 16 out of the 51 (31.37%), students surveyed had a score of 42 or greater, indicating MPA greater than or equal to the higher 50% of the MPAI-A scale, 10 students (19.6%), reported a score of 50 or higher, and 4 students (7.84%) reported a score of 60 or higher. There are few studies in assessing the prevalence of MPA in this age group to date, but previous literature supports my hypothesis and the results of this study. In the first formal study of MPA prevalence rates for children and adolescents in 2022, Papageorgi found that 11% of participants ($N = 410$) experienced high levels of MPA, although the threshold for this "high level" was not reported. In 2023, Spahn et al. surveyed 67 German brass students ages 13-26 utilizing the Kenny Music Performance

Anxiety Inventory for adults (2009, 2011) and found that 10% experienced high dispositional MPA, but the age range of this top percent was not disclosed. In my study, it is worth noting that 31.37% reported MPA at or above the top 50% of the MPAI-A scale, and all 51 students surveyed in my study experienced MPA manifestations to some level, therefore confirming that MPA is an issue for young adolescents that music educators need to be able to address.

For question #2, (Does the prevalence of MPA vary based on different factors [e.g., age, years of experience, type of ensemble?]), I hypothesized that increased age and years of musical study would lower MPA due to the factors of increased age and experience being shown to decrease MPA in previous literature (Candia et al., 2023; Fernholz et al., 2019; LeBlanc et al., 1997; Sadler & Miller, 2010; Sarbescu & Dorgo, 2014; Steptoe & Fidler, 1987). For the sample in my study, the descriptive statistics supported my hypothesis as 6th grade had the highest average MPAI-A score of 41.23 (7th grade, 28.29 average; 8th grade, 28.70 average). However, in the descriptive inferential model, the factors of age and years of experience did not cause statistically significant changes in MPAI-A scores. That said, all 7 students in the interviews spoke to a sense of increased confidence having gone through more performing experiences as they got older. Therefore, while age and years of experience were not factors that could predict MPA in my model (based on albeit, a skewed sample), descriptive statistics and interview data add to previous research findings that increased age and experience can lower MPA.

I had also hypothesized that MPA would be higher in instrumental versus choral ensembles in line with Sokoli et al.'s 2022 findings. Sokoli et al. surveyed 75 male and 111 female classical music university students, ages 15-45, and found that singers (n = 23) reported less anxious feelings and catastrophizing than instrumentalists. Sokoli et al.'s study utilized a survey comprised of several previously validated questionnaires and inventories, such as assessing anxious feelings with the State-Trait Anxiety Inventory (Spielberger, 1983) and catastrophizing with three items originally developed by Steptoe and Fidler (1987). By contrast, my study utilized one scale, designed and validated for MPA in adolescents, and therefore was a much shorter battery for participants. I also studied a smaller, younger sample, with a much smaller range of ages. Descriptively, the orchestra at this school had the highest average MPAI-A score (45.54), followed by the chorus (32.07) and then band (24.17). In the model generated by my survey results, being in Orchestra was the only statistically significant predictor for an increased MPAI-A score, which coincides with Sokoli et al.'s 2022 findings, although more studies are needed.

Taken together, the variance seen in the data collected through investigating my second research question suggests that MPA is highly individual in students, and therefore is unlikely to be fully predicted by factors such as age and type of ensemble. Papageorgi's (2022) study of 410 students aged 12-19 supports that these factors may not be predictive of MPA as 60% of the variance in MPA was due to individual characteristics that affected students' vulnerability to anxiety (e.g., students' perception of high levels of anxiety, perception of critical adults, low self-concept in music, and perfectionistic tendencies), students' task efficacy (e.g., low perceived self-efficacy in music), and students' reaction to the performance environment (e.g., students' sensitivity to an audience presence and to the degree of self-exposure, and if they feel the performance environment is uncomfortable), as opposed to other factors assessed, gender and age. In my study, there were several outliers in the survey, such that age (via grade level), and ensemble type (aside from being in Orchestra) had no statistical significance on MPAI-A scores. This individual variance across students is supported by the limited literature in this area, as Zelenak's (2019) study of 73 secondary band and string orchestra students found that self-efficacy, a major predictor of MPA, had no significant correlations with years of ensemble enrollment, and the relationship between students' self-efficacy and their audition score achievement had no differences due to instrument type, age, or gender. Through my mixed method study, individual variance could be seen in my sample within and across the surveys and interviews. Individual student perceptions and characteristics were further expressed in the interviews addressing the third research question for this study.

Through investigating question #3, (How do middle school students recognize and describe their experiences with MPA in performances, the classroom, and their own practice?) in the interviews, I found that years of performing experience, more so than a student's age or ensemble type influenced the extent to which students could describe their experiences. With more performing experiences to draw from, students seemed to have an easier time identifying and sharing in their interviews. In general, and paradoxically, those who had lower MPA were better able to express their experiences of MPA in the interviews. While it makes sense that those who are experiencing less performance anxiety would be less anxious and therefore more expressive in an interview situation, this does present a challenge for music educators and researchers aiming to address MPA, particularly for musicians with less performing experience.

In both the surveys and the interviews, it seems that students struggle the most with MPA during solo performances, particularly in judged performances. In the survey, the MPAI-A item of, "I would rather play/sing in a group or ensemble, than on my own," had the most notable results, with 16 out of 51 students selecting the highest option, "6-all of the time" (31.37%) and 29 choosing a selection that indicated "more than half the time" (56.86%). The interviews corroborated with this, as all participants (n = 7) expressed their comfort in ensemble performances compared to increased anxiety in solo performances. Musicians in previous studies have also self-reported their highest MPA in solo performances, both in Western classical (Nicholson et al., 2015) as well as genres such as popular and jazz (Papageorgi et al., 2013). This increased comfort in group performance has also been seen in previous studies where solo performances have been linked to higher MPA than ensemble performances, and MPA decreases as the number of co-performers increase (Brugués, 2011; Sarbescu & Dorgo, 2014; Wilson & Roland, 2002).

Further, interviewees shared that formally judged performances caused greater distress. Students' perception of the presence of a judging audience influences the level of nerves that they may feel while performing (Gómez-Sirvent et al., 2024). Participant 3's increased distress with judged performances is supported by the literature (LeBlanc, 1994; Kenny, 2011; Taborsky, 2007; Wilson & Roland, 2002), and suggests that the judged performance context merits attention from adults supporting students, especially since anxiety experienced in auditions has been seen to increase MPA development (Guven, 2007). A fear of negative evaluation has been identified to be a core component of MPA (Nicholson et al., 2015), and in a judged scenario, a negative evaluation can have further ramifications than a poor concert performance, such as a lower ranking in competition or not receiving further performing opportunities. Therefore, negative experiences with judged performances could simultaneously escalate MPA development and discourage students from pursuing other musical opportunities, beyond an unsuccessful audition.

Despite these commonalities, it became apparent through analyzing the quantitative and qualitative data (both separately and together), that there was much individual variation in students' experiences with MPA, and how they expressed those experiences in responding to the survey and interview. There were several outliers in the survey for demographic factors and

MPAI-A score, such as individual 8th graders and band players (whose groups on average had lower MPAI-A scores) having higher scores. There were also significant discrepancies between survey and interview results from the same student, with students reporting low MPAI-A scores then expressing higher levels of MPA in their interview, to the point of the phenomenon preventing them from auditioning for opportunities. Therefore, MPA seems to be highly individualized, and worth further investigation using a variety of methods in order to gain as much insight as possible. Further, given that MPA affects each individual student in such a personalized way, music teachers are called to assist each child through their pedagogy so that students are not deterred from continuing their music education (Mazzarolo et al., 2023).

Implications for Music Education

As was my intention for this study, several implications were revealed that could aid in shaping and further refining ensemble music education, including which students need support and how music teachers might provide this support. First and foremost, this study indicates a need to talk with all students about music performance anxiety. The survey results show that every student experienced MPA to some degree, and every student in the interviews described instances of MPA and how the phenomenon held them back in their musical learning, regardless of their self-reported MPAI-A score. Further, for many in the interviews, our conversation was the first time that they had talked about MPA. In asking if there was anything that a music teacher had done to help them with MPA, students shared ways that their private teachers had addressed MPA, spoke about vague verbal support from their school music teachers, shared a teacher's suggestion to "imagine putting paper bags" on audience members' faces, or simply responded, "no." Beyond the possibility of this silence creating a stigma and shame around feeling anxious as a performer, a significant teaching opportunity is missed by neglecting to address MPA in music pedagogy. If students are not aware of MPA, they will likely have difficulty in recognizing it and managing the phenomenon (Gómez-López & Sánchez-Cabrero, 2023), regarding their feelings as inescapable in the process of music learning (Burin & Osório, 2016). Quantitative and qualitative results from this study show that MPA is affecting young adolescents that have the privileged benefits of attending a private school, so it follows that MPA is likely affecting young adolescents in other educational settings as well. Therefore, a major implication from this study is that teachers would benefit from additional training regarding MPA (Sieger, 2017), which could begin in pre-service education so that teachers in all settings are best prepared to aid their students (Moura & Serra, 2021).

This study also suggests that MPA is highly individual; not just as a result of one's ensemble, age, or level of experience (Spahn et al., 2023). A student's relationship with performing is malleable and is constantly shaped by their home and school environments (Kenny, 2011). My youngest interviewee was privy to this, admitting that their experience in public speaking helped them to perform, despite their above-average MPAI-A score of 52:

> "Well, I just want to say it's different for everyone. For some people that have grown up on stage and have always been watched by judges our entire lives, it's going to be completely different for a kid that just joined choir. For a child that never performed. Somebody that doesn't really do speaking. It's always different for different people". - Participant 2

As students' proclivities to and experiences with MPA are individual, teachers need to form positive relationships with each student to support individualized aid (Kirsner et al., 2023; McPherson et al., 2012). Since MPA is different for every student, music educators need to talk about MPA with every student; breaking down the stigma and starting the conversations to alleviate the phenomenon.

Perhaps the easiest environment to start this conversation is in ensembles. Both survey and interview data revealed the power that ensembles have in helping students to feel supported in their music learning journey. Students report being the most anxious performing solo and would rather perform as part of a group (Nicholson et al., 2015). Further, MPA may prevent some students from pursuing performance opportunities outside of their enrollment in an ensemble (McNeil et al., 2022). Additionally, ensembles feature interpersonal relationships with both the music teacher and with a student's peers; relationships that have been identified as crucial to students' efforts in managing their MPA for well-being (Tahirbegi, 2022). As such, ensembles present an opportunity to build students' resiliency against MPA. Part of this resiliency is built in developing students' self-efficacy, and ensembles provide opportunities for students to experience the four sources of self-efficacy: mastery experiences, vicarious experiences, verbal/social persuasion, and physiological and affective states (Bandura, 1997).

In a 2022 study of 228 instrumental music students in grades 6-8 in the United States, self-efficacy was found to have a negative association with MPAI-A scores, and there was a significant positive association between MPAI-A scores and the linear combination of mastery experience and verbal/social persuasion (Bersh). Increased performing opportunities as an ensemble, from rehearsals to higher stakes judged performances, can build students' collective and individual confidence as performers through mastery experiences, the strongest source of confidence (Bandura, 1977). By encountering the physiological and affective states of performing together, students can also experience social persuasion in the form of encouragement from their peers and their teacher (Bersh, 2022). This social persuasion could be even more influential for pre-teens and teens, as Zelenak (2019) found that verbal/social persuasion exhibited the strongest influence on high schoolers' level of achievement in auditions ($N = 73$, age $M = 14.18$). Ensembles also provide students with vicarious experiences as they observe their peers' performing in rehearsals and concerts. Across the group experiences in and outside of rehearsals and concerts, students will further develop social support in their ensembles, which has been found to help combat MPA in scale studies in younger groups aged 11-18 (Orejudo et al., 2021; $n = 299$), and in undergraduate student interviews (Huang & Yu, 2022; $N = 53$). With budget cuts causing ensemble programs to be in question at districts, this social-emotional learning spurred by the unique opportunities of ensemble classes bolsters support for ensemble programs in our schools (McNickle & Morris, 2022).

Within music teachers' efforts in their ensembles, study results suggest a targeted approach for 6th grade. For many students, especially those who do not take private lessons, a middle school ensemble could be their first time performing for an audience. As heard in the interviews, these nerves can be further exacerbated if the middle school ensemble is multi-grade such that 6th graders are playing with older players who have more performing experience (Sarbescu & Dorgo, 2014). While grade level itself may not be a predictor of MPA, a student's first experiences with performing (and any resultant MPA) are likely to be formative, and to inform their future relationship with performing (Kenny & Osborne, 2006). For example, the highest MPAI-A score in both the survey (score of 66, $N = 52$) and the interviews (score of 65, $n = 7$) were exhibited by 8th graders. The 8th grader whom I got to interview (MPAI-A score of 65), talked about their first experience with MPA as a 6th grader, comparing themselves with "the big kids" in the 6th-8th grade ensemble. While they shared that over time, the ensemble "became like a little family" that was "helping each other learn," they still struggled with MPA as an 8th grader and associated performing with MPA. Therefore, it is vital that these first performing experiences are enjoyable and successful, and that MPA is addressed from the start of a student's performance experience (Boucher & Ryan, 2011; Osborne & Kenny, 2008).

Another population that may require a targeted approach is male students. Among the population for whom I had gender information (*n* = 7), female students reported higher levels of MPA, which is in line with previous literature (Coşkun-Şentürk & Çırakoğlu, 2018; Fernholz et al., 2019; Osborne & Franklin, 2002; Osborne & Kenny, 2005; Tardif et al., 2024; Wesner et al., 1990). Following this, the males in my study seemed to under-report their anxiety. For the three male students for whom I had access to their gender identity, they all reported low MPAI-A scores (8, 12, and 37). Then, in their interviews, it quickly became apparent that two of these males (the participants with scores of 12 and 37) experienced true struggles with MPA, to the point that they said that MPA affected their performance quality and enjoyment of performing, and even that MPA prevented them from pursuing performance opportunities. In the survey, these male students ranked MPA manifestations of all types (e.g., physical manifestations of shaking, heart racing, emotional manifestations such as nervousness and panic, and mental manifestations such as difficulty concentrating) either very lowly or with "not at all, never," yet then spoke at length about those very manifestations in our interview. This speaks to a larger issue for men perhaps fearing feelings of shame in admitting anxiety, even at this age (Fisher et al., 2023). Similarly to the 25 young men (ages 15 – 25) in Fisher et al.'s (2023) study, my male participants noticed and shared physical effects of MPA in their interviews, but perhaps did not connect these feelings to anxiety, as they self-reported low physical effects in the survey. Therefore, as male students may be less likely to acknowledge and admit MPA and ask for help, music teachers should proactively address MPA and break down this stigma, particularly for their male students who face additional patriarchal pressure that causes them to stay silent about their struggles (Ryan, 2015).

This study also suggests that string orchestra students may require additional attention in music education. Survey results indicated that being in Orchestra was a significant predictor for a higher MPAI-A score. This is in line with previous research that found that string players and singers reported the highest levels of MPA, with brass players displaying fewer manifestations (Iusca & Dafinoiu, 2012). While more studies with this age group are needed, music programs might do well to specifically direct attention to lessening MPA for their string students. Perhaps due to the fact that string players' faces are visible and not otherwise engaged like wind players or singers, the sense of being seen by the audience while performing could raise the social anxiety aspect of MPA (Gómez-Sirvent et al., 2024). As such, teaching string players acting techniques may be useful in lessening MPA both as additional stage training and experience (Candia, 2023; Dobos et al., 2019) and as an activity to fully engage string players' bodies.

What Can Music Educators Do to Help?

In line with the purpose of this study, my methods and analysis examined the prevalence of MPA in middle school students and allowed me to describe their experiences of MPA in order to inform teachers working with this age group. As supported by literature (Gómez-López & Sánchez-Cabrero, 2024) and my interview data, students look up to their music teachers and want to make them proud, entrusting teachers with a powerful role in developing student musicians. As expressed earlier, a major step that music teachers can take to help their students is to simply start and continue an open conversation about MPA (Ryan, 2015; Tahirbegi, 2022). Given the limited research in this area and the descriptive nature of this study, further research is needed to pinpoint exact educational interventions for this phenomenon in young adolescents, particularly as a 2023 systematic review of teachers' approaches to MPA management reported that teachers felt that they needed additional training (Mazzarolo et al.). This said, this study does provide some insights and specific recommendations that can guide music teachers' pedagogy.

Pedagogical Interventions. Ensemble education gives music teachers the opportunity to maximize the use of positive peer support, and from a practical standpoint, to address MPA most broadly across their student roster (Bersh, 2022; Huang & Yu, 2022; Orejudo et al., 2021). Given that adolescent music students report being more comfortable performing in a group in this and previous studies (Brugués, 2011; Wilson & Roland, 2002), music teachers can build starting from students' comfort in ensembles and use ensemble performances to explore factors that can influence MPA. Using ensembles as a safe vehicle for performing, music teachers should consciously increase performance opportunities and the variety of performances. Here, it is important to vary the performing environment in room and audience size and type so that students can acclimate to performing in a variety of spaces. Teachers should also work to vary the context of performances, including judged performances, in order to increase students' experience levels in a range of performance contexts. Through repeated exposure within the safety of the ensemble, students can build confidence and comfort in a range of performance contexts and environments (Kenny, 2011).

One performance context that can be neglected in school music programs is performing in a small group (Campbell, 2007). In the interviews, students with the lowest MPAI-A scores expressed that performing in a small group made them more nervous than performing solo. As compared to the larger ensembles of band, chorus, and orchestra, where each instrument/voice is performing the same music as a group of peers, small ensembles have much fewer co-performers per part, with the possibility of each individual student playing their own musical line.

Additionally, small ensembles often do not have a conductor at the front keeping the group together. Therefore, small ensembles provide a unique challenge where performers are more exposed than they are in a large ensemble, but still have the ensemble responsibilities and reliance on others that is not a factor in solo performances (Davidson & Good, 2002). Music teachers can aid students' small ensemble skills and confidence in this context of performing by creating opportunities for small cooperative learning groupings in rehearsals and lessons (Whitener, 2016).

In rehearsals and small group lessons, music educators need to explicitly teach practice techniques so that students practice effectively and in ways that boost self-efficacy (Bersh, 2022; Dempsey & Comeau, 2019; Robson & Kenny, 2017). Teacher feedback should be a model for positive self-talk so that students learn how to coach themselves through performance struggles (LeBlanc, 1994; McPherson et al., 2022; Sternbach, 2008). Music educators can also teach relaxation techniques such as breathing and positive visualization (McKinney, 2008; Sternbach, 2008), and utilize them in rehearsals and performances; helping students to build a consistent pre-performance routine. MPA management techniques should be integrated into music teachers' regular pedagogical practices; not only because regular practice of MPA management will lead to greater student success, but as separate treatment of MPA in the classroom may further stigmatize MPA (Moura & Serra, 2021; Sieger, 2017).

Furthermore, and particularly as students in this study and previous literature have reported feeling most nervous in judged performances (Kenny, 2011; Wilson & Roland, 2002), music teachers can use rehearsals and lessons to teach audition techniques; mimicking this performance context in a lower-stakes environment and giving students more experience (Spahn et al., 2016). For example, a teacher could have students play in sections and have the other students peer-review and provide feedback (Herman, 2022). This can simultaneously build relationships in the group (Ginsburg-Block et al., 2006), increase students' confidence in performing and being evaluated (Osborne, 2015), and develop students' listening skills (Hatch, 2020). Additionally, this can create opportunities for vicarious learning experiences which can develop self-efficacy (Bandura, 1997). These peer-reviewed performances could be done using gradually smaller groups as students get more comfortable.

Throughout musical activities, teachers should strive to encourage a flow state (Csikszentmihalyi, 1990) for their students as much as possible. This state of complete immersion and enjoyment has been found to have a strong negative relationship with MPA (Cohen & Bodner, 2019; Moral-Bofill et al., 2022; Spahn et al., 2021). The sense of accomplishment that flow induces causes flow experiences to also serve as mastery experiences that build self-efficacy (Bandura, 1977). As self-efficacy has been shown to be a negative predictor of MPA and a positive predictor of performance boost and self-rated performance quality (González, 2018), this process is a positive loop of increased confidence and satisfaction in rewarding performing experiences. Following this, flow experiences can be a catalyst for the growth of students' passion and intrinsic motivation for learning music. Some wording in the interviewed aligned with the concept of flow, and students were emphatic as they described their enjoyment of this state of making music. This dedication and love for music-making will serve as fuel for students' musical identities (Davidson & Burland, 2006; Lamont, 2011; Pitts, 2009), driving students to keep learning and keep performing, even amidst feelings of MPA and setbacks along their musical journey.

Within ensemble education, teachers must employ special attention toward students' first music learning and performing experiences (Boucher & Ryan, 2011; Osborne & Kenny, 2008).

Much of this responsibility falls on the music teacher who has the privilege of being the teacher for students' first performances in the school's music program. Early performances are very new and likely nerve-wracking situations for young musicians (Kenny, 2011). It is crucial that students feel successful in these experiences so that they have positive associations with performing (Urruzola & Bernaras, 2020), lessened debilitating MPA in future performances (Murphy et al., 2024), and even so that they continue in music (Sichivista, 2004). For all performances, music teachers need to choose appropriate repertoire and prepare students thoroughly, setting the stage for positive performing experiences (LeBlanc, 1994). By choosing appropriate repertoire, music teachers should strive to find the optimal level of challenge; enough to inspire effort and growth, but not so difficult that the student becomes discouraged and anxious. This point of optimal challenge is depicted in the Yerkes-Dodson law (1908) as the peak of the inverted U-function between arousal and performance quality. Selecting appropriate repertoire is a key function of teachers holding realistic learning goals for their students, which is key for the development of students' self-efficacy, as repertoire that is too challenging could result in failure experiences (MacAfee & Comeau, 2023). Following appropriate repertoire selections, music teachers then need to use lessons and rehearsals to properly prepare students for the performance of this repertoire in measurable steps (Henton, 2023). In preparing most effectively, the difficulty of the task (i.e., performing the repertoire) is gradually reduced, lessening the task component of MPA.

Interpersonal Interventions. To make music learning and performing positive experiences, music teachers need to focus on relationship-building, both with their students and within the ensemble (MacGregor, 2022). As expressed by my interviewees, students recognize teachers' musical expertise, and they may have fears of messing up in front of someone who has the knowledge of what the piece is supposed to sound like. Some students also shared that they feel additional pressure of messing up in front of their teacher as they acknowledge their teacher's efforts in working with them the music, and students do not want to anger or disappoint their teacher. Therefore, it is vitally important that teachers alleviate these concerns and are a source of positivity in music learning (Ryan et al., 2021). Students' sense of their music teacher believing in them is a crucial component to self-efficacy in music and a resultant resiliency against MPA (Orejudo et al., 2021). This trust and sense of security must be consciously built over time through repeated verbal encouragement (Zelenak, 2019) and instructional support.

While teachers work to have an individual relationship with each ensemble member, they should facilitate the growth of supportive relationships within the ensemble. This can be done musically and extra-musically through rehearsal activities (Parker, 2014; Paul, 2020). Additionally, shared non-musical experiences such as team-building exercises and trips can further build peer relationships in the ensemble (Parker, 2010). If students feel supported by the learning community of their ensemble and the rehearsal is a safe space where mistakes are encouraged as part of the learning process, they will likely grow to have less fear of making a mistake in performing (Moura & Serra, 2021; Sieger, 2017). Students' efforts must be consistently encouraged through verbal persuasion (Gill et al., 2022) so that they feel "good enough" and have the inspiration to keep learning, as well as the grit to persist when they make a mistake, or their efforts seem to fall short for a performance.

While enacting this pedagogy, teachers should be on the lookout for MPA-indicating behaviors, such as over practicing or avoiding performance opportunities. Addressing these indicative behaviors with a student is much easier, and is likely to be better received, if rapport is built through conversations about MPA from the start of a teacher-student relationship. As parents are adults in students' lives who influence their experiences with and expressions of MPA (Kirsner et al., 2023; Orejudo et al., 2021), teachers should educate and involve students' parents in conversations surrounding performance anxiety as much as possible, building a community of support for students. With support, teachers can focus on building students' self-efficacy for, and resultant self-worth in, music performance; thereby inspiring and encouraging students' passion for music and fostering students' musical identities to form shields against the effects of MPA (McPherson et al., 2012; Orejudo et al., 2021). In summation, music teachers have a great responsibility and, through music education, many great opportunities to alleviate MPA for their students. Future research should continue to address MPA in young adolescent students and explore specific educational interventions so that teachers are informed about the phenomenon affecting their students, and can feel more confident in taking on their crucial role in music students' development.

Suggestions for Future Research

This study serves as a limited-sample study of MPA in a private middle school in the southeastern United States toward the end of the academic year. Therefore, several suggestions for future research are driven by the limitations of this study; primarily, to expand the sample and the timeline in order to gain more data, with a greater representation of the middle school population.

Limitations of the Current Study

This study has a number of limitations that must be considered in order to contextualize the results and their implications for practice. My primary limitations were based on my sample. I was limited by the use of one private school within the southeastern United States. The prevalence and experience of MPA could be shaped by factors at this specific school. Though the sample was ethnically diverse, it was not economically, limiting the generalizability of the results. Given that I had one school site, I studied the students of only three teachers, with one teacher per ensemble. As such, it is possible that differences in MPA between ensembles could have been due to individual differences in each teacher's pedagogy.

Regarding the interview portion of my study, there may have been a sampling bias evident in those whom I interviewed. As stated, only 7 students turned in the permission and assent forms, and luckily, all 7 agreed to be interviewed. Therefore, the students that were interviewed were pulled from students who had the desire and initiative to turn in the required forms. However, this meant that I could not select interviewees based on the survey results as originally planned, nor could I select a representative sample for each ensemble, grade, and gender. Furthermore, with this self-selection bias, I was pooling from a source that was more comfortable or eager to share their experiences with MPA. This said, the self-selection element could have been a contributing factor to the quality of the interviews conducted. Those who volunteered to share their experiences were perhaps predisposed to provide more in-depth and high-quality responses to the interview questions. It is also worth noting that both of my study instruments are self-report, and so the integrity of my findings was dependent on my student participants. Students unaware or afraid of acknowledging MPA may have skewed their responses (particularly in the survey), modifying the results. This said, in this study, due to the fact that the selection of interview participants was based on which students turned study permission forms in (versus selection based on their reported MPAI-A scores as initially planned), I ended up interviewing students who I otherwise wouldn't have picked based on their scores, revealing discrepancies between low self-reported MPAI-A scores and interview data that I might not have found otherwise.

This study was also fairly limited in terms of timing. While we started participant recruitment in December 2023, there were significant slowdowns (outside of my or my school contact's control) in gathering participants. After several delays, and only receiving 7 completed permission and assent forms, we then needed to change plans as it was apparent that I would have too small of a sample size to achieve a mixed methods study. It took some time to confirm with school administration and IRB that the music teachers could administer the survey to their classes and share the deidentified data with me. Due to this, the majority of the data collection spanned just one month from March to April 2024.

Despite these limitations, the data saturation between both surveys and the interviews does construct a narrative of the middle school students' experiences with MPA. As narratives of MPA in young adolescents continue to come to light, it is hoped that with collective research, strides forward can be made in discovering ways to ease this phenomenon in this population, making the benefits of music participation more accessible for all.

Suggestions for Future Studies

As my study was preliminary in nature, this study should be expanded to include different schooling environments such as public schools, where students might not have access to as many resources. It would also be worth expanding this study to gain a larger sample size. Through the support of the TIS music teachers and school administration, my survey was administered to 51 students (94.44% of the ensemble student body), but I was only able to draw direct parallels between the surveys and interviews for the 7 students who turned in the permission and assent forms (16.67% of the student body). Having a larger sample could minimize the effect of individual characteristics becoming outliers, and would add to the representation of this under-researched population.

Additionally, as previously stated, it would have been very interesting to examine more of the academic year as opposed to March and April 2024. Beyond lengthening the study, this would have allowed for more observations regarding MPA in the school's music program. For future research, broadening into a longitudinal design with a longer timeline would be particularly useful for researchers examining how MPA affects young adolescents so that changes due to experiences can be tracked.

Furthermore, with more time in a longer study, additional check points could be added, including but not limited to: interviews with the ensemble directors, following a small focus group from each ensemble, and rehearsal observations. Gathering data on teachers' perceptions of their students' MPA would have been very interesting, and first-hand observations by the researcher would have been a nice complement to gathering reports about rehearsal and concert activities retroactively in interviews. Having additional check points would also allow for a longitudinal study; examining how MPA might change throughout the year in response to different performance demands, such as the competition that the students participated in earlier in the year. It would also be worth using a combination of self-report and objective measures, as students may not be aware of, or willing to admit, MPA. In order to add physiological quantitative measures of MPA, one could add targeted measures before and after rehearsals or performances such as heart rate, salivary oxytocin, and cortisol levels. These measures could also be taken before and after students review the concert recordings to provide a more complete picture of the entire learning experience.

Since this was a descriptive study, I did not know going into the project that there would be such a big difference in the sample sizes for survey and interview participation, nor that there would be great differences between what a student self-reported on the survey that they took in class versus probing questions in an interview with me. Due to the discrepancies found between the 7 students' survey and interview results (particularly in my male participants), it would have been very interesting to conduct more interviews in order to cross-reference students' self-reports via a Likert scale versus their own narrative accounts. This said, the contradictions between survey and interview results of this study hold implications for scale validation, and further indicate a need for more mixed methods studies in this area in the future. Additionally, as a descriptive study, I primarily targeted acquiring a breadth of information on this under-researched population and gathered quantitative and qualitative data that assessed a wide array of facets of student MPA, including factors, manifestations, effects, and coping strategies. Any one of this study's themes could be focused on and deepened in a future study, particularly those that arose from the interviews, such as how flow state, relationships, or bolstering musical identity can mitigate MPA.

Part of the intention of this study was to examine how to make the benefits of music education more accessible through lowering the barrier of anxiety, and based on the study results, it can be concluded that performance anxiety does affect young adolescents in music programs. Therefore, I hope to use the knowledge gained from this study to reduce the stigma of MPA, generate more research for this age group, and develop more educational, empowering, and enriching music education experiences for all. While some level of performance anxiety is natural, inevitable, and even necessary for optimal performance, I believe that it is possible to prevent MPA's potential to dampen (or sadly, to deter) students in their musical experiences. Studies such as this are a step toward addressing student MPA, but there is still work to be done to fully develop music education's potential to foster students' bravery to perform, and to strengthen their musical identities so that all can find, through learning music, what Participant 2 described in their last statement of our interview:

> "It's always different for different people. But I can say everyone can find that inner confidence inside themselves. And that's the most important thing." - Participant 2

6. References

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7. Appendices

7.1 Survey Instrument

Student Survey: The Prevalence and Experiences of Music Performance Anxiety in Young Adolescent Students

Please answer each question to the best of your ability. You may skip questions or drop out of the study activity at any time. If you become stressed, please inform the researcher. Thank you for your time!

* Indicates required question

1. What grade are you in? *

Mark only one oval.

- ( ) 6th
- ( ) 7th
- ( ) 8th

2. What ensembles are you a part of at school? Choose all that apply. *

Check all that apply.

- [ ] Band
- [ ] Chorus
- [ ] Orchestra

3. How long have you studied music at home or at school? *

Mark only one oval.

- 1 year
- 2 years
- 3 years
- 4 years
- 5 years
- 6+ years

Your Music Performing Experience

Please think about music in general and your major instrument and answer the questions by filling in the number, which describes how you feel. '0' is "not at all", and 6 is "all the time".

4. Before I perform, I get butterflies in my stomach.

Mark only one oval per row.

	0- not at all	1	2	3- about half the time	4	5	6- all the time
Rating	⬭	⬭	⬭	⬭	⬭	⬭	⬭

5. I often worry about my ability to perform.

Mark only one oval per row.

	0- not at all	1	2	3- about half the time	4	5	6- all the time
Rating	⬭	⬭	⬭	⬭	⬭	⬭	⬭

6. I would rather play on my own, than in front of other people.

Mark only one oval per row.

	0- not at all	1	2	3- about half the time	4	5	6- all the time
Rating	⬭	⬭	⬭	⬭	⬭	⬭	⬭

7. Before I perform, I tremble or shake.

Mark only one oval per row.

	0- not at all	1	2	3- about half the time	4	5	6- all the time
Rating	⬭	⬭	⬭	⬭	⬭	⬭	⬭

8. When I perform in front of an audience, I am afraid of making mistakes.

Mark only one oval per row.

	0- not at all	1	2	3- about half the time	4	5	6- all the time
Rating	⬭	⬭	⬭	⬭	⬭	⬭	⬭

9. When I perform in front of an audience, my heart beats very fast.

Mark only one oval per row.

	0- not at all	1	2	3- about half the time	4	5	6- all the time
Rating	⬭	⬭	⬭	⬭	⬭	⬭	⬭

10. When I perform in front of an audience, I find it hard to concentrate on my music.

Mark only one oval per row.

	0- not at all	1	2	3- about half the time	4	5	6- all the time
Rating	⬭	⬭	⬭	⬭	⬭	⬭	⬭

11. If I make a mistake during a performance, I usually panic.

Mark only one oval per row.

	0- not at all	1	2	3- about half the time	4	5	6- all the time
Rating	⬭	⬭	⬭	⬭	⬭	⬭	⬭

12. When I perform in front of an audience I get sweaty hands.

Mark only one oval per row.

	0- not at all	1	2	3- about half the time	4	5	6- all the time
Rating	⬭	⬭	⬭	⬭	⬭	⬭	⬭

13. When I finish performing, I usually feel happy with my performance.

Mark only one oval per row.

	0- not at all	1	2	3- about half the time	4	5	6- all the time
Rating	⬭	⬭	⬭	⬭	⬭	⬭	⬭

14. I try to avoid playing on my own at a school concert.

Mark only one oval per row.

	0- not at all	1	2	3- about half the time	4	5	6- all the time
Rating	⬭	⬭	⬭	⬭	⬭	⬭	⬭

15. Just before I perform, I feel nervous.

Mark only one oval per row.

	0- not at all	1	2	3- about half the time	4	5	6- all the time
Rating	⬭	⬭	⬭	⬭	⬭	⬭	⬭

16. I worry that my parents or teacher might not like my performance.

Mark only one oval per row.

	0- not at all	1	2	3- about half the time	4	5	6- all the time
Rating	⬭	⬭	⬭	⬭	⬭	⬭	⬭

17. I would rather play in a group or ensemble, than on my own.

Mark only one oval per row.

	0- not at all	1	2	3- about half the time	4	5	6- all the time
Rating	⬭	⬭	⬭	⬭	⬭	⬭	⬭

18. My muscles feel tense when I perform.

Mark only one oval per row.

	0- not at all	1	2	3- about half the time	4	5	6- all the time
Rating	◯	◯	◯	◯	◯	◯	◯

Thank you for your time! Here, you will share whether you would be interested in doing a 30 minute interview as well. Willing students will be chosen at random. Thank you!

19. Would you be interested in sharing more of your experiences in a 30-minute interview?

Mark only one oval.

◯ Yes

◯ No

7.2 Interview Protocol

Student: _________________________________

MPA Score (out of 90): __________

MPA % each factor:

Somatic and Cognitive Features (#1, 2, 4, 5, 6, 7, 9, 12, 13, 15): __________

Performance Context (#3, 11, 14): __________

Performance Evaluation (#8, 10): __________

Student Interview Protocol/Questions (Strand 2)

(Semi-structured, 30 minutes): n = 7

Thank you so much for taking the time to share your experiences with me. Today we will be talking about your musical experiences, and when nerves, "stage fright," or "performance anxiety" may come up while performing music. Data gathered from this interview will be kept anonymous. You will not be identified, and you can skip any questions or stop the interview at any point. Do you have any questions before we begin?

1. Tell me a little bit about your music learning experience? How does music make you feel? Why do you do it? What are your music goals?

2. It is a totally normal part of performing to get nervous. Describe the most recent time you got nervous while performing. Paint me a picture of what was going on at that time.

a. (FROM SURVEY-ASK ABOUT PHYSICAL- (butterflies in stomach, trembling, heart racing)

b. MENTAL- (difficulty concentrating, panic)

c. EMOTIONAL- (worry)

d. BEHAVIORAL- (avoiding performing opportunities)

3. Describe what goes on in your brain when you perform. What do you feel? Does it affect your playing? How?

4. What environments seem to make you the least nervous? The most nervous?

a. (FROM SURVEY-in front of others, for parents/teacher, group playing versus solo)

5. What do you do when you start to experience MPA? What helps?

6. Is there anything that a teacher has done that has helped you with your MPA?

7. What do you think you would do if you never struggled with MPA?

Thank you so much for your time today. When I am done transcribing your responses, I will send you a copy for your approval, and you will have a chance to clarify or change any things before I analyze the data. Please reach out to me if you have any questions in the meantime, and I wish you all the best in your musical endeavors!

Questions subject to change due to the sequential mixed methods model being used

7.3 Qualitative Codes Driven by Voice-Centered Relational Analysis

Reading Number	Codes Generated	Themes Generated
1. "Reading for the plot and for [our] responses to the narrative"	- Physical manifestations - Cognitive manifestations - Avoidance behavior - Approach behavior	- MPA Manifestations - MPA Behaviors - Individual Coping Strategies
2. "Reading for the voice of the 'I'"	- Musical identity - Self-efficacy - Flow - Age/experience	- Music Passion Against MPA - Flow
3. "Reading for relationships"	- Teacher's role - Parent's role - Co-performers	- Number of Co-Performers - Ensemble-mates - Teacher-Student Relationship - MPA Strategies from Teachers - Parent-Student Relationship
4. "Placing people within cultural contexts and social structures" of the performing ensembles	- Performance context - Performance environment - Judged performances	- MPA Factors

(Mauthner & Doucet, 1998, p. 130-147)

7.4 IRB Approval

INSTITUTIONAL REVIEW BOARD

Mail:	P.O. Box 3999	In Person:	3rd Floor
Atlanta, Georgia 30302-3999			58 Edgewood
Phone:	404/413-3500	FWA:	00000129

June 26, 2023

Principal Investigator: Martin Norgaard

Key Personnel: Darling-Aduana, Jennifer S; Norgaard, Martin; O'Brien, Kathryn R

Study Department: School of Music

Study Title: The Prevalence and Experiences of Music Performance Anxiety in Young Adolescents

Review Type: Expedited Category 6, 7

IRB Number: H23597

Reference Number: 374386

Approval Date: 06/24/2023

Status Check Due By: 06/23/2026

The Georgia State University Institutional Review Board (IRB) reviewed and approved the above-referenced study in accordance with 45 CFR 46.111. The IRB has reviewed and approved the study and any informed consent forms, recruitment materials, and other research materials that are marked as approved in the application. The approval period is listed above. Research that has been approved by the IRB may be subject to further appropriate review and approval or disapproval by officials of the Institution.

It is the Principal Investigator's responsibility to ensure that the IRB's requirements as detailed in the Institutional Review Board Policies and Procedures For Faculty, Staff, and Student Researchers (available at gsu.edu/irb) are observed and to ensure that relevant laws and regulations of any jurisdiction where the research takes place are observed in its conduct.

Federal regulations require researchers to follow specific procedures in a timely manner. For the protection of all concerned, the IRB calls your attention to the following obligations that you have as Principal Investigator of this study.

1. For any changes to the study (except to protect the safety of participants), an

Amendment Application must be submitted to the IRB.The Amendment Application must be reviewed and approved before any changes can take place.

2. Any unanticipated problems occurring as a result of participation in this study must be reported immediately to the IRB using the Unanticipated Problem Form.

3. Principal investigators are responsible for ensuring that informed consent is properly documented in accordance with 45 CFR 46.116.

   - The Informed Consent Form (ICF) used must be the one reviewed and approved by the IRB with the approval dates stamped on each page.

4. A Status Check must be submitted three years from the approval date indicated above.

5. When the study is completed, a Study Closure Form must be submitted to the IRB.

All of the above-referenced forms are available online at http://protocol.gsu.edu. Please do not hesitate to contact the Office of Research Integrity (404-413-3500) if you have any questions or concerns.

Sincerely,

Catherine Chang, IRB Co-Vice Chair

7.4a IRB Amendment Approval

INSTITUTIONAL REVIEW BOARD

Mail: P.O. Box 3999
Atlanta, Georgia 30302-3999
Phone: 404/413-3500

In Person: 3rd Floor
58 Edgewood
FWA: 00000129

November 17, 2023

Principal Investigator: Martin Norgaard

Key Personnel: Darling-Aduana, Jennifer S; Norgaard, Martin; O'Brien, Kathryn R

Study Department: School of Music

Study Title: The Prevalence and Experiences of Music Performance Anxiety in Young Adolescents

Review Type: Expedited Amendment

IRB Number: H23597 Reference Number: 377422

Approval Date: 06/24/2023

Expiration Date: 06/23/2026

Amendment Effective Date: 11/17/2023

The Georgia State University Institutional Review Board reviewed and **approved** the amendment to your above referenced Study.

This amendment is approved for the following modification(s):

- Adding that this is a dissertation study
- Adding [redacted] as a site
- Due to adding a second school, increase the study population to N=260.
- Removing the teacher interview portion.

The amendment does not alter the approval period, which is listed above, and the study must be renewed at least 30 days before the expiration date if research is to continue beyond that time frame. Any unanticipated events or problems resulting from this investigation must be reported immediately to the University Institutional Review Board.

For more information visit our website at www.gsu.edu/irb.

Sincerely,

Catherine Y. Chang

Catherine Chang, IRB Co-Vice Chair

7.5 Student Assent Form

Georgia State University Assent Form

Title: Examining The Prevalence and Experiences of Music Performance Anxiety in Young Adolescents
Principal Investigator: Dr. Martin Norgaard
Co-Investigator: Dr. Jennifer Darling-Aduana
Student Principal Investigator: Kathryn O'Brien

Purpose

We want to learn about how middle school students feel when they perform music. We are studying something called music performance anxiety, or "stage fright." This means feeling nervous before or during a music performance. We would like you to join our study because you are a middle school music student at [redacted] or [redacted]

Procedures

If you decide to join, you will answer a survey about performing music. It will take up to 30 minutes. You might also do a 30-minute interview to talk more about performing. We will do these activities during the fall and winter.
Survey:
Sit at a school computer and answer questions for up to 30 minutes.
The questions will be about how you feel when performing.
At the end, you can say if you want to do an interview.
If you feel stressed, you can stop and leave the study. Interview:
We will randomly choose 40 students for interviews.
The interview will be 30 minutes, with the student researcher.
We will ask you questions about your music learning experiences.
This interview will be in a private room at school.
We will ask your permission to record the interview.
If you feel stressed, you can stop and leave the study.

Risks

Thinking about anxiety may be upsetting. We will make sure you feel comfortable. We will also keep everything private. If you feel anxious during the study, we will get help from the school psychologist.

Benefits

This study may not help you personally. It will help us understand that many young musicians feel anxious while performing. We want to learn more and make learning music more enjoyable.

Voluntary Participation and Withdrawal

You don't have to join if you don't want to. You can decide to join and later change your mind. You can leave the study at any time. No one will be upset with you. Your parent/legal guardian cannot make you be in the study. Your teacher won't know if you participate or not. Your grades won't be affected.

Assent

We will give you a copy of this Assent Form to keep.

If you want to join this study, please print your name and sign below.

____

Printed Name of Participant

____ ________________

Signature of Participant Date

____ ________________

Principal Investigator or Researcher Obtaining Assent Date

7.6 Parental Permission Form

Georgia State University Parental Permission Form

Title: The Prevalence and Experiences of Music Performance Anxiety in Young Adolescents
Principal Investigator: Dr. Martin Norgaard
Co-Investigator: Dr. Jennifer Darling-Aduana
Student Principal Investigator: Kathryn O'Brien

Introduction and Key Information

We invite your child to take part in a research study. You will decide if you would like your child to take part in the study.
The purpose of this study is to gain insight into middle schoolers' experiences with music performance anxiety so as to inform music pedagogy.
Your child's role in the study will last 30 minutes to an hour over three months over the fall and winter.
We will ask your child to do the following: Take a survey regarding music performance anxiety. If parental permission is given and a child agrees, they may be selected for a 30-minute interview to discuss their experiences with music performance anxiety.
If your child is part of this study, the risks of being in this study include: distress in discussing music performance anxiety. All measures to alleviate any distress will be taken, and the school psychologist will be available should a child need support.
This study is not designed to benefit your child. In discussing music performance anxiety, it is hoped that we reduce the stigma around the condition. We hope to gain information on music performance anxiety in this under researched population, and to use the data generated by this study to design possible instructional strategies to reduce music performance anxiety.
If you do not wish for your child to take part in this study, your child can decline. This will not affect their grade or class experience. Teachers will not know who is or who is not participating.

Purpose

The purpose of the study is to gain insight into middle schoolers' experiences with music performance anxiety so as to inform music pedagogy. We invite your child to take part in this research study because your child is a middle school music student at [redacted] or [redacted]. We will invite a total of 260 people to be in this study.

Procedures

If you decide for your child to take part in this study, your child will fill out a survey regarding music performance anxiety. This survey will take about 30 minutes. If permission is given and your child is willing, they may be selected for a 30-minute interview to discuss their experiences with music performance anxiety. Both study-related activities will take place over six months of the fall and winter school year.
Survey:
30 minutes, one time, with the student researcher on a computer at school

Questions will be about music performance anxiety
There will be a question at the end indicating whether student would be willing to take part in an interview
Your child will be removed from the research if they show signs of stress and do not finish the survey

Interview:
40 students will be selected for interviews, with representation from each grade level and music ensemble
30 minutes, one time, with the student researcher
Questions will be about your child's experience with anxiety in music learning
This interview will take place in a private room at school
This interview will be audio recorded (with permission from you and your child)
Your child will be removed from the research if they show signs of stress and discontinue the interview

Future Research

We may use your child's information for future research. We will remove information that may identify your child. We will not ask for permission from you if we do this.

Risks

Your child may become upset from being in this study in thinking about anxiety. We will try to prevent this by conducting the research in a comfortable and confidential environment. If your child experiences anxiety, please let the researcher know and we will stop and seek help from your school psychologist. Contact the research team as soon as possible if you believe your child has been harmed. Georgia State University and the research team have not set aside funds to pay for any injury.

Benefits

This study is not designed to benefit your child personally. Your child may benefit from learning that music performance anxiety is not uncommon in young music students. We hope to gain information about music performance anxiety in your child's age group so that we can help make music learning as enjoyable as possible.

Alternatives

The alternative to taking part in this study is to not take part in the study.

Voluntary Participation and Withdrawal

Your child does not have to be in this study. If you decide for your child to be in the study and change your mind, your child can drop out at any time. Your child can skip questions. Participation in the study will not affect your child's grades or class experience. Your child's music teacher will not know who is participating or not, and no preference will be given to those who participate. The decision to take part, or not take part, will have no effect on your child's grade or standing in this class.

Confidentiality

We will keep your child's records private to the extent required by law. The following people and groups will have access to the information your child provides:

The research team: Dr. Martin Norgaard and Dr. Jennifer Darling-Aduana (Co-Principal Investigators) and Kathryn O'Brien (Ph.D. Student)

GSU Institutional Review Board

Office for Human Research Protection (OHRP)

We will use a study number rather than your child's name on study records. We will store the information your child provides on a password- and firewall- protected computer. The key will be stored separately from the data to protect privacy to identify the research participant. This key will be destroyed after the dissertation defense of this study. Audio recordings from interviews will be stored on a password- and firewall-protected computer and kept confidential. These items will be stored for the duration of the study. When we present or publish the results of this study, we will not use information that may identify your child.

Contact Information

You can contact Dr. Martin Norgaard at (404) 413-5901, mnorgaard@gsu.edu. You can contact Dr. Jennifer Darling-Aduana at jdarlingaduana@gsu.edu. You can contact Kathryn O'Brien (student) at (607) 351-0418, kobrien21@student.gsu.edu

If you have questions about the study or your child's part in it

If you have questions, concerns, or complaints about the study

If you think your child has been harmed by the study

The IRB at Georgia State University reviews all research that involves human participants. You can contact the IRB if you would like to speak to someone who is not involved directly with the study. You can contact the IRB for questions, concerns, problems, information, input, or questions about your child's rights as a research participant. Contact the IRB at 404-413-3500 or irb@gsu.edu.

Parental Permission

We will give you a copy of this Parental Permission Form to keep.

If you are willing for your child to be in this research study, please sign below.

____

Printed Name of Participant

____

Printed Name of Parent/Legal Guardian

____ _______________

Signature of Parent/Legal Guardian. Date

Granting permission for (Initial for all that apply):

Survey: _____ Interview: __ Audio Recording of Interview: _____

____ _______________

Principal Investigator or Researcher Obtaining Parental Permission Date