TEACHING BEGINNING ORCHESTRA STUDENTS IN A VIRTUAL ENVIRONMENT

By

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Abstract

This qualitative study examines beginning strings teaching in a fully virtual learning environment. The specific research methodology employed is phenomenology. Through the process of surveying and interviewing both strings teachers and beginning strings students, three main themes are explored: the ramifications of the virtual learning environment, teacher actions in this environment, and student responses to both the virtual environment and their teachers.

Keywords: teaching, beginning strings, music, virtual, online, orchestra, motivation, and teacher-student relationships.
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Chapter I: Introduction

Introduction

In the Spring of 2020 during the COVID-19 pandemic quarantine, educators around the world faced the challenge of shifting their instruction from in-person settings to virtual environments. Many music educators faced the challenge of teaching lessons through video chat platforms for the first time. As the pandemic continued into a new school year, many music educators faced an even greater hurdle: how to start beginners on a new instrument in a fully virtual learning environment. I encountered this obstacle myself, in my own position as an orchestra teacher. As I navigated the obstacles, surprises, frustrations, and successes of teaching beginning string lessons in a virtual environment, I felt drawn to explore this phenomenon more closely. I wanted to learn how my string orchestra colleagues were responding to this situation and see how their experiences compared to mine. I also wanted to hear from students who were learning in this unique setting.

Purpose Statement

The purpose of this thesis is to explore the phenomenon of beginning string lessons in a fully virtual environment from the perspective of both teachers and students. In the five chapters herein, I will specifically examine teacher-student relationships in this unique setting.

The research question this thesis seeks to answer is: How do string teachers build and foster optimal teacher-student relationships with beginner string orchestra students in a fully virtual teaching environment?

Importance of the Study

The information in this thesis will be of value to music educators who are teaching lessons in a fully virtual learning environment. This information is also helpful for beginning
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string students who are learning in this type of environment, as well as for their parents. The greater field of music education will benefit from this information as the challenge of teaching in a virtual environment continues into the future.

Definition of Terms

In this section, I will define several terms used throughout this study that may be unfamiliar to some readers.

Virtual Learning Environment: A learning environment in which the teacher and student are not in physical proximity to each other, and instead use a video chat platform to connect for lessons.

Beginning Strings Students, or Beginning Orchestra Students: Students who are just starting to learn a string instrument.

String Instruments: Standard instruments found in a school orchestra program, which include violin, viola, cello, and string bass.

String Pedagogy: The specific teaching techniques or strategies used by strings teachers to build their students’ skills on their instrument.

Learning Management System: This is a digital platform used to structure online course content. These systems allow a teacher to customize the design of their course and provide students access to the content at any time.

Note Reading: The symbol recognition required for reading written music notation. Reading notes while also playing an instrument can be particularly challenging for beginning students.

Instrument Position/Posture/Technique: The way a student holds their string instrument. This is of special concern to teachers of beginning string students as a student’s physical posture greatly impacts the success of playing a string instrument.
**Bow Hold/Bow Grip:** The way a string player uses their right hand to hold and manipulate the bow. Each finger must be in a specific position in order to execute a bow grip correctly.

**Tuning Instruments:** The process a string player uses to tighten or loosen each string on their instrument to the correct pitch. String instruments must be tuned often because of the way that changes in temperature and humidity effect tuning. The teacher usually tunes their beginning string student’s instrument at the beginning of each lesson because the skills needed for tuning are too advanced for beginning students.

In Chapter One, I gave information on the purpose of this study, the specific research question this study explores, the importance of the study, and a definition of key terms. In Chapter Two I will provide a review of literature related to this study exploring the new experience of teaching beginner string students online.
Chapter II: Review of Related Literature

In the previous chapter, Chapter One, I introduced this study about pedagogical approaches in the virtual beginning orchestra classroom and gave some information on the importance of this research. In this chapter, Chapter Two, I will review the literature related to my study of relationships between teachers and students in a fully virtual beginning strings learning environment. Many scholars agree that there is an association between positive teacher-student relationships and motivation in the music classroom, and that these relationships may be impacted by a fully virtual setting. I have organized my review of the literature into the following sections: Positive Teacher-Student Relationships, Learner Motivation in the Music Classroom, Teaching and Learning in the Virtual Classroom, and Beginner String Teaching. In the first section on positive teacher-student relationships, I will provide information on the impacts of these relationships on student academics and human development, as well as best-practices for developing these relationships. In the second section on learner motivation in the music classroom, I will provide information on different theories of motivation. In the third section, I will discuss teaching and learning in the virtual classroom including elements and structure of virtual teaching and learning and skills required for teaching virtually. In the fourth section, I will discuss beginner string teaching including areas of instruction, strategies for skill development, and beginner string lesson design.

Positive Teacher-Student Relationships

In this section, I will provide information on positive teacher-student relationships. The following sections outline how positive teacher-student relationships impact students’ academic achievement (Crosnoe, Johnson, & Elder, 2016; Bernstein-Yamashiro & Noam, 2013; and Davis, 2006), students’ human development (Jorgensen, 2008; Schumacher, 2020; and Royston,
2017), and best-practices for building and fostering teacher-student relationships (Watts, Eldreth, Grant, & Renne, 2020; and Jones, 2020).

In a longitudinal research study of adolescents, Crosnoe, Johnson, and Elder (2016), education professors at various universities, found that stronger teacher-student relationships had a positive impact on students’ academic achievement, even after sociodemographic profiles were controlled. Positive relationships between students and teachers also seemed to lower incidents of negative behavior.

Bernstein-Yamashiro, an experienced teacher and principal, and Noam, a psychologist that works with adolescents, found that positive relationships with a teacher can motivate a student to explore content further, which deepens their academic growth (Bernstein-Yamashiro & Noam, 2013). As they described, a teacher having faith in a student’s ability to do something is more motivating than external rewards. “Teacher-student relationships tend to create a personal investment that motivates students to perform well academically. Students do not want to let their teachers down once there is a strong relationship or they feel teachers are invested in their success” (Bernstein-Yamashiro & Noam, 2013, p. 33). Bernstein-Yamashiro and Noam (2013) believe that relationships should not be emphasized over curriculum, but rather curriculum should be a springboard for relationships. As they describe, having a good relationship creates a foundation through which tough topics can be discussed. Similarly, through her research, Davis (2006), professor at Ohio State University, discovered that the content area in which teacher-student relationships are constructed matters. Students who enjoy a particular content area and expect to do well in a course usually report positive relationships with their teachers.
Teacher-student relationships also impact students’ human development as they mature. Jorgensen (2008) emphasizes that teachers should value all people because of their shared, common humanity. As she states, “an educator’s task becomes one of breaking barriers, crossing borders, and bridging differences in order to help students better understand themselves and their fellow human beings around the world as compassionately and broadly as possible” (Jorgensen, 2008, p. 20). Thus, for Jorgensen, each student deserves to be treated with dignity and teachers should strive to help their students develop this view of others as well.

Royston (2017), a band director and Professor of Music Education at Iowa State University, explored the unique nature of teacher-student relationships and human development specifically in music ensemble classrooms. She found that this setting presents unique opportunities for teachers to model healthy interpersonal relationships for their students as they build relationships with them over time. As Royston (2017) states, “these interpersonal relationships are fundamental to learning and human development” (p.34).

In his research, Schumacher (2020), an active teacher, composer, and performer, focused on the impact of teacher-student relationships in building healthy empathy in students. Schumacher found that practicing empathy with his students through positive teacher-student relationships helped build community and reduce stress and anxiety levels in his classroom. He found that his students could then transfer this learning to relationships in other parts of their lives.

Best-practices for building positive teacher-student relationships have been explored by many researchers. Jones (2020), a middle school music educator and senior manager of online learning for Conn-Selmer, incorporates what she calls “Five G’s” for building positive relationships with her students. She believes that it is important to get students’ names correct,
generate a smile through conversation and interaction, gain common ground in order to build the relationship outside of the music classroom context, get students talking about themselves, and guard the culture of the music room so that it becomes a welcoming community.

Watts, Grant, Eldreth, and Renne (2020), all active music educators, believe that caring well for students is an integral part of a music teacher’s role. They found four areas that facilitate the development of these relationships: modeling, dialogue, practice, and confirmation. Music teachers can model care for others in the way that they teach musical concepts and incorporate multiple instructional modes to meet the individual needs of students. They also model care by going out of their way to help students outside of the school day. The idea of dialogue encourages ongoing discussion between the student and teacher; rather than rigidly adhering to his or her own ideas, a teacher must listen to and respect their student’s ideas and encourage them to form their own opinions. Teachers help their students practice care for others by providing them with opportunities to care for other people and their environment. And, confirmation involves recognizing the trajectory of a student’s growth in a positive direction and acknowledging this growth.

Finally, Royston (2017) states that before building healthy relationships with their students, teachers must understand themselves, understand their students and colleagues, be aware of their perceptions of others, and be able to check their emotions. Royston emphasizes that teachers must show empathy towards their students, be able to move freely about the room to have close proximity to their students, and demonstrate that they respect and trust their students.
Learner Motivation in the Music Classroom

This section discusses literature concerning several theories of learner motivation in the music classroom including “Achievement Goal Theory” (Bergonzi, 2003), mastery goals (Tucker, 2020; and Selby, 2017), intrinsic versus extrinsic motivation (Jagow, 2007; Jorgensen, 2008; Walvoord, 2019; and Cooper, 2004), and the “ARCS model of motivation” which Azaiza (2011) applies to all classrooms.

Bergonzi (2003), Head of Music and the orchestra director at the University of Illinois-Chicago, explored what he termed “Achievement Goal Theory” (AGT) which focuses on determining the underlying purpose behind participating in achievement-earning actions (p.15). This theory differentiates between learning goals, which focus on a task, and performance goals, which refer to an unchanged notion of ability. Instead of focusing solely on performance outcomes, music teachers, according to Bergonzi, should teach their students to focus on the process of learning and set goals on specific tasks, effort, and mastery. He stated, “I’d like for the inherently collaborative process of music making to be the motivating force behind my students’ efforts at achieving musically… To move students in the direction I want, I must assist them to develop their own musicianship and the perseverance related to learning stringed instruments” (p. 34).

Tucker (2020), a beginning band teacher and doctoral candidate at the University of North Texas, researched mastery goals in the music classroom. Students, she found, form mastery goals based on their own past achievements and their perceived capacity to improve and are more intrinsically motivated and less afraid of failure. As she explained, “If students believe that their success or failure is due to their level of ability, they may feel helpless because ability is inborn and outside their control… However, if they attribute their learning task outcomes to
effort and feel a sense of ownership, students may be more motivated and persist through challenges” (Tucker, 2020, p.32). Tucker believes that music teachers should create an environment that helps students form goals that are focused more on mastery, not performance. She holds that students should be encouraged to have autonomy over their learning, and that music teachers can do this by giving their students choices and helping them create their own learning goals.

Selby (2017), a veteran school orchestra director, echoes the idea of mastery goals in his research by stating that students will be more likely to strive towards something in which they are personally invested. Because of this, Selby believes teachers should provide opportunities for students to succeed, and then take the time to recognize these successes. “Students will have many different motivations for doing work, including grades, peer pressure, and teacher approval. But those motivators are all secondary to the satisfaction and pride students feel about their own accomplishments,” as Selby (2017) explains, “when delivering praise, focus on the success of your students and how it makes them feel. Encourage them to be proud of their accomplishments” (p. 200).

Moving beyond the music classroom to the wider field of education, Azaiza (2011), who is a Director of Instructional Design at the University of Miami, explored the ARCS model of motivation. She believes capturing student attention is the first step towards increasing learning motivation. Secondly, she posits that relevance increases motivation by relating content to students’ personal lives. Azaiza further thinks that confidence in the learning environment comes through student successes and meaningful feedback throughout the learning process. And, she holds that satisfaction can be achieved through applying recent learning in a real, hands-on setting.
Jagow (2007), Professor of Music and Director of Bands at Wright State University School of Music, focuses on the difference between intrinsic and extrinsic motivation in her research. She found that extrinsic rewards should not be implemented for tasks that are already expected of all students. Musicians, Jagow found, often participate in tasks that are open-ended and involve problem solving, and intrinsic motivation is required for these types of tasks. She proports that if extrinsic rewards are used to motivate these types of tasks, students’ motivation to participate will actually decrease over time. As she explains, “if students are intrinsically motivated they will learn a subject out of interest and an attraction for challenge” (Jagow, 2007, p. 138).

Jorgensen (2008), Professor Emerita of Music Education at the Indiana University Jacobs School of Music, agrees with Jagow’s (2007) view of intrinsic and extrinsic motivation. She believes that students will want to stay involved in a group if they feel connected and motivated. As Jorgensen (2008) states, “extrinsic and hedonistic rewards may be important incentives for amateurs and professionals alike, but the intrinsic motivation of the music itself and the way this music is taught and learned, rehearsed and performed carries the greatest weight over the long term” (p. 83). Jorgensen’s (2008) and Jagow’s (2007) research indicates that while extrinsic motivation may be effective for students in the short-term, intrinsic motivation should be fostered to ensure life-long learning.

In related research, Walvoord (2019), professor of violin at the University of Texas, explored strategies that music teachers can employ to increase their students’ intrinsic motivation. Walvoord has found that her students are engaged and motivated when they are included in the process of learning. She applies this principle with her students by working with them to set long-term and short-term goals, and strategic plans for their progress. As Walvoord
(2019) describes, “by taking steps to encourage greater autonomy in our students’ work, we help train them to be successful beyond their student years in all facets of their professional development. By nurturing our students’ love of music in an organized and structured way, we help them build life-long pathways to success” (p. 22).

Cooper (2004), a former Professor of Music at Asbury College, states that teachers cannot give students motivation, but they can provide them with a learning environment that helps students find motivation. He promotes that teachers must have high expectations for their students and remind students of those expectations. Cooper indicates that there is an ongoing balancing act of which teachers must be aware: challenging students without discouraging them, helping them be successful without boring them, and being faithful to educational objectives while also making content relevant for students.

**Teaching and Learning in the Virtual Classroom**

This section summarizes literature that discusses virtual teaching and learning, and includes information on the elements and structure of virtual teaching and learning (Green, 2020; and Taylor, 2020), skills required for teaching virtually (Rehn, Maor, & McConney, 2018; Moskowitz, 2016; and Bryans-Bongey, 2016), and principles for connecting with students in a virtual setting (Sull, 2014; Kipp, 2013; and Brown, 2020).

Green (2020) is a professor of educational technology and recognizes that distance learning must be approached differently than face-to-face instruction. Green describes foundational elements of distance education that teachers must understand in order to create effective instruction. Green’s (2020) “framework [for distance education] includes five elements: infrastructure, community, content delivery, engagement, and assessment and evaluation” (p. 10). As he describes, “the complex relationship of three primary elements – content delivery,
engagement, and assessment and evaluation – is at the heart of the framework,” and, “educators who are acutely skilled at teaching at a distance are able to successfully attend to these three elements at the same time” (Green, 2020, p. 10). In distance education, Green points out that students and teachers are not in the same physical space. However, he believes that distance education should still be a thoughtfully executed part of a formal education system with a clear plan for instruction, which promotes student learning, engagement, and assessment. Green (2020) further explains that digital tools enhance communication between the learners and teacher, which combats the obstacle of physical separation.

In her research, Taylor (2020), an educator and blended learning specialist, recognized that teachers must have solid pedagogy and teaching skills before they begin learning how to teach online. She states, “teaching with technology is not a silver bullet. Good teaching is just good teaching. It’s solid pedagogy combined with content and knowledge of your students. It’s creating a clear roadmap from your learning standards to assessing the learning and crafting a plan to allow technology to help us” (Taylor, 2020, p. 47). Taylor asserts that teachers must know their content and the standards they are teaching. Then, teachers must understand what students already know so that they can connect previous learning with where students need to go next. Once we, as teachers, know where students need to go, we can engage them in the learning process.

In their research, Rehn, Maor, and McConney (2018), professors of education, explored specific skills needed by K-12 educators for creating a successful learning environment for distance students, specifically through synchronous learning experiences. They found that online teachers need a mix of technical, pedagogical, and interpersonal skills. “The participants in this study stressed the importance of being more organized, structured and clearer when teaching in a
videoconference. There is a greater risk of ambiguity and misunderstanding in communication when the teacher is not face to face with students” (Rehn, Maor, & McConney, 2018, p. 424). During interviews, Rehn and his colleagues asked teachers to identify what made for successful teaching in a distance learning environment. Their responses included the following: opportunity to experiment with new strategies, student engagement, meaningful learning, relationships with students, and minimal technical interruptions. The teachers in this study also found that they must understand how a two-dimensional image lacks the multisensory cues of a face-to-face exchange, and consider how a teacher’s eye contact, tone of voice, proximity to the camera is perceived by students. Rehn and his colleagues (2018) found that there is an element of ‘teaching is acting’ when teaching in a virtual setting.

Moskowitz (2016) is an experienced educator and professor who has studied how teachers transition to instructing in online settings. He found that teaching online requires different skills than face-to-face instruction. Moskowitz propounds that online teachers should have the following qualities: dedication, motivation, flexibility, organization, passion, and patience. He further thinks that teachers must be adept in content design, knowing their content area thoroughly so that they can adjust and modify the course as needed. In addition to these traits, Moskowitz (2016) believes that online teachers must have a firm knowledge of technology, so they are able to run the course smoothly and help students with technology issues that arise. Finally, Moskowitz holds that online teachers must be excellent communicators, regularly engaging with their students. “Communication skills are critical for every teacher, but they are particularly important for an online teacher. Online teaching requires a heightened awareness of how one communicates virtually, and it requires teachers to ask the right questions with the appropriate tone” (Moskowitz, 2016, p. 29).
In her research, Bryans-Bongey (2016), a professor of instructional technology at the University of Northern Iowa, introduced the idea of “community of inquiry” in online learning experiences. This involves three specific elements: social presence, cognitive presence, and teaching presence. Bryans-Bongey (2016) describes social presence as how a student sees him or herself as part of the online learning community, which impacts a student’s comfort level with participating in the course. At the K-12 level, she believes this can be facilitated through introductory activities, icebreakers, synchronous class meetings, and frequent interaction between teachers and students. Cognitive presence, as described by Bryans-Bongey (2016), refers to how a student interacts with course content and peers, and can be fostered at the K-12 level through interactive activities such as wikis, discussions, or blogs. Finally, Bryans-Bongey uses teaching presence to refer to how the teacher establishes the environment of the course through organization, facilitation, support, and socialization. She found that these three elements heavily influence one another. Bryans-Bongey states, “research to date reveals that Teaching Presence has a positive impact on Cognitive Presence. Data also suggest that when Teaching Presence is high, students are more likely to identify themselves as satisfied with the course and their learning” (2016, p. 42).

Sull (2014), an online instructor, examined specific strategies for connecting with students in a virtual environment. He found that the three most crucial components of distance education are solid and continual student engagement, an ability to motive and enthuse students, and a strong and growing student-instructor rapport. Sull (2014) found that engagement can be fostered through welcome emails, anticipating and addressing student anxieties, ensuring that students hear the teacher’s voice often, setting a positive tone, and verifying that the course is organized and working properly. He also found that motivation can be cultivated by relating
course content to the students’ daily lives. Finally, Sull (2014) believes that teachers can build rapport with their students in an online setting through organization, promises kept, prompt responses to email communication, sending individual positive emails, and offering extra help or resources to students.

In her book on online teaching, secondary educator and instructional coach Kipp (2013), suggests that a quality online course is defined by connection to content, connection with the teacher, and connection with other students. She believes that course content should emphasize collaboration, communication, and creativity. Kipp (2013) further believes that student connections with the teacher are important and should begin on day one of the course. She states, “I wholeheartedly believe that teachers are the most important element in any online classroom. They are the ones behind the scenes who are challenging students to excellence. A computer, no matter how sophisticated, cannot do that work because it is very personal work and different for every student’s needs,” and, “I know my student’s stories. I know their skills. I know how to customize their learning experience. I am their teacher and that’s an absolutely vital role if online learning is to be successful” (Kipp, 2013, p. 23). She propounds that teachers must find ways to connect with students from the very beginning and recommends beginning a course with student surveys and phone calls so that students are invited to introduce themselves, share past learning experiences, and set goals for the course. Kipp (2013) also recommends beginning a new course with a synchronous webinar to introduce students to the layout of the course.

In her research, Brown (2020) shares insights from her thriving online business teaching music lessons via a video chat platform. She discusses how to make meaningful connections with students in a virtual setting by acknowledging their need for attention, using positive reinforcement, making non-personal observations about their progress, sandwiching critiques
between positive statements, and incorporating humor. Brown (2020) found that it is best for teachers to monitor their students’ facial expression and body language by focusing on the eyebrows and lower quadrant of their face, and it is important for teachers to look directly at the camera, not at their own thumbnail image, so that students can read the teacher’s facial expressions. Brown also believes that it is critical for teachers to choose their words carefully when teaching in a virtual setting. She states, “it’s easy to lose the trust of a student from a distance by choosing words in haste, and even harder to re-establish trust when you’re not in the same room” (Brown, 2020, p. 21).

**Beginning String Teaching**

This section summarizes literature discussing elements of beginning string teaching. This includes areas of instruction for beginner string players (Benham, et al., 2011), independent skill development (Allen, 2003; Turner, 2005; and Suzuki, 1983), the importance of review and repetition (Hamann & Gillespie, 2013; and Selby, 2017), and beginner string lesson design (Cooper, 2004; and Erwin, Horvath, McCashin, & Mitchell, 2007).

Benham and his orchestra teaching colleagues (2011), writing in the American String Teachers Association’s curriculum, map three main areas of instruction for string players: executive skills & knowledge, musicianship skills & knowledge, and artistic skills & knowledge. Each of these areas involve cognitive information students must know and physical tasks executed in response to this information. Benham and his colleagues (2011) further describe that each of these areas can be subdivided into simple components with varying performance expectations based on a particular student’s grade level. Finally, Benham and his colleagues found that as students hone their skills, they should be held to higher standards of achievement in each area.
Turner (2005), a string educator, focuses on the physical necessities of string playing in her research, particularly the bimanual coordination required by string players. She describes how a string player’s left and right hands must execute very different tasks simultaneously and independently of each other. Turner states, “unlike the players of most other instruments, a string player performs distinctly different tasks with the left and right hand. String teachers should establish from the start with their students the habit of daily reinforcement of such skills” (2005, p. 11). Turner found that it is necessary to establish production protocols with string students so that the student’s body is able to execute a task on cue without conscious mental effort. To build right hand bowing skills, Turner instructed her students to practice specific bow styles on open strings or on a single pitch until the production protocol was stable. Then, they could proceed to add left hand notes. To build left hand patterns, Turner’s students practiced repetitively in short patterns until they flowed naturally. Turner (2005) established that incorporating one left hand protocol and one right hand protocol into a daily warm up helped her students to apply specific skills to their repertoire.

Allen (2003), a string teacher and music professor, developed a model for pacing instruction of beginning string players. His model begins by establishing an initial framework for right hand skills, left hand skills, and music-reading skills separately. Allen (2003) describes right hand techniques for beginner string players as learning how to hold the bow, working on bow control, exercises to build strength, shadow bowing, and bowing open strings. Left hand techniques for beginner string players, as summarized by Allen, include instrument position, pizzicato, open strings, selected rhythms on open strings, ascending and descending tetrachords on the D and A strings, and a D Major scale. Music reading skills, as defined by Allen (2003), include saying, singing, and writing the notes of the D Major scale with specified rhythm values.
Once established separately, Allen delineates how these concepts can be combined in different pairs (e.g., right hand + left hand, left hand + music reading, right hand + music reading). Allen (2003) believes that only after these basics have been mastered in pairs should they all be combined at once.

The renowned violinist and pedagogue, Shinichi Suzuki (1983), developed a method of music instruction that emphasizes the importance of developing a child’s aural skills first and music literacy skills much later. In his method, students listen repetitively to quality recordings of the instrument being played and learn to play their instrument without immediately learning to read written music. Suzuki (1983) believed that the printed score is simply a representation of the music. Therefore, according to Suzuki, it is important for young students to absorb the sound of music being played expressively, and later learn how to interpret a written score.

Hamann and Gillespie (2013), professors of music education and experts in string pedagogy, emphasize the importance of review and reinforcement of skills throughout beginning string instruction. They firmly believe that constant review of previously learned skills must be built into the instructional process in order to establish a firm foundation in the early years of string playing. Hamann and Gillespie state, “these foundational skills must become so well-established that they become habits” (2013, p. 31). They propound that careful, slow progress is better than rushing students through a method book, as adequate time must be given to internalize each new skill. According to Hamann and Gillespie (2013), “research shows that typical elementary school beginning string class students can understand only one or two new ideas per class” (2013, p. 43). Because of this, they found that review should take up most of the time in a beginner string class.
Selby (2017), an experienced string orchestra director at every level, echoes the importance of review in beginner string lessons. He found that in most academic classroom settings more emphasis is placed on covering new content, while review is an occasional activity conducted right before a test. He states, “musicians…spend a relatively small amount of time learning new skills compared to the vast majority of time spent practicing and refining skills. In the school climate, we frequently find ourselves having to explain the importance of practice, and defending the rehearsal and review that is so important to success for all musicians. We only introduce a skill once, and the introduction is important, but how we review skills every day after that introduction is even more important” (Selby, 2017, p. 48). Selby, like Hamann and Gillespie (2013), believes that the majority of instructional time in a string orchestra classroom should consist of review because string players at every level must review technique often. Selby also reminds educators that before introducing a new technique, it is important to ensure that the necessary fundamentals are stable and well-developed. According to Selby (2017), string teachers must also be aware that as students’ bodies change and grow technique may need to be reestablished.

Cooper (2004), in his book on instrumental pedagogy, describes five principles for teachers to consider when designing beginner instrumental lessons. The first three principles include experiential learning before moving to theoretical knowledge, moving students from the known to the unknown, and guiding students from the whole to the parts and back again. These principles help teachers plan for effective instruction. Cooper (2004) further describes two principles that guide the delivery of instruction: student learning depends upon their desire to learn, and teaching is the art of making students want to learn. Cooper, like Suzuki (1983), also
found that it is effective for teachers to introduce a new concept with lots of modeling and experiencing before moving students to written notation.

In their methodology for teaching beginning strings, Erwin, Horvath, McCashin, and Mitchell (2007), experienced string teachers and music professors, advocate for a heterogeneous approach to string teaching that instructs all four string orchestra instruments simultaneously while also building instrument-specific skills in a sequential manner. In their approach to beginning string instruction they, like Allen (2003), emphasize the importance of building left- and right-hand skills separately before combining. Erwin and her colleagues (2007) found that this approach allows students to build solid fundamentals in each area of musicianship. They further describe that successful beginner string lessons should cycle through three areas: 1) review of known skills, concepts, and music fundamentals, 2) focus on new skills, concepts, and music fundamentals, and 3) preparation for the next skill or concept. This cycle, according to Erwin and her colleagues, integrates the process of review with the acquisition of new knowledge. They state, “‘review’ implies that students have already mastered the material, but it is a very effective technique to use review material for warm-ups and at any time in the lesson where students need to take a new skill and apply it to an already mastered element. By systematically integrating new skills with mastered techniques and material, a more comprehensive approach is provided for the development of performance technique” (Erwin, Horvath, McCashin, & Mitchell, 2007, p. 12).

In conclusion, Chapter Two includes scholarship concerning Positive Teacher-Student Relationships, Learner Motivation in the Music Classroom, Teaching and Learning in the Virtual Classroom, and Beginner String Teaching. To better understand relationships between beginning string students and their teachers, it is important to research the impacts of a virtual setting in
order to understand how relationships are built and fostered in a fully virtual environment. The literature included here forms the foundation of this research because it helps develop the framework from which to better examine my research question: *How do string teachers build and foster optimal teacher-student relationships with beginner string orchestra students in a fully virtual teaching environment?*

In this chapter, Chapter Two, I reviewed the literature related to this study focused on building relationships in a fully virtual environment. Next, in Chapter Three, I will describe the methodology I used to address my research question and the design of the study, as well as the procedures used for analysis.
Chapter III: Design and Methodology

In Chapter Two, I reviewed the preexisting literature about Positive Teacher-Student Relationships, Learner Motivation in the Music Classroom, Teaching and Learning in the Virtual Classroom, and Beginner String Teaching. In Chapter Three, I will now explain how I designed this research project and share my methods of analysis. I have created the following subsections for the ease and understanding of the reader: Process, Participants, Qualitative Research, Data Collection and Analysis. As I noted in Chapter One, the research question driving this study is:

**How do string teachers build and foster optimal teacher-student relationships with beginner string orchestra students in a fully virtual teaching environment?**

**Process**

In the midst of the COVID-19 pandemic, I suddenly found myself thrust into the challenge of teaching my beginner orchestra students in a fully virtual format. Therefore, my process for conducting this research began with trying to understand how best to approach my role as a beginner strings teacher in this completely new virtual setting. I was curious as to how the virtual environment would impact the teaching process, particularly in regards to building relationships with students whom I did not yet know. For this research, I knew I wanted to survey and interview other teachers of beginner string players, and their students, about their experiences in a fully virtual environment to see how their experiences compared with mine. I reached out via email to several elementary strings teachers in the local vicinity. Three (3) teachers accepted my proposal and signed the Informed Consent form (see Appendix A). These teachers in turn recommended students of theirs who had started with them in a fully virtual format, so that I could interview them about their experiences as well. I then invited each
participant to complete an electronic survey, interviewed each participant once, audio recorded all interviews, and finally, I transcribed each of these recordings for analysis.

**Participants**

Teacher participants for this study were selected using purposive sampling. This type of sampling identifies participants according to specific criteria or characteristics that are pertinent to the research topic and allows the researcher to gain in-dept insights on their research question (Turner, 2019). Because I was trying to understand teaching beginner strings students in a virtual environment, I used this type of sampling which is typical for qualitative researchers (Turner, 2019). In order to help answer my question about teaching beginner strings students in a virtual environment, I needed teachers of beginner string players to participate in my research, and these teachers must have started beginner string students in a virtual environment. Once these details were confirmed, my population to select from seemed rather small. I selected three (3) teachers who teach beginning string orchestra from a variety of public schools who had started new students in a virtual environment. I reached out to these teachers via email. I found their email addresses on their school district webpages if they were identified as strings teachers. After they received an Informed Consent form (see Appendix A) they consented to being surveyed and interviewed. It should be noted that all three participants were female. While there are male teachers that I am sure fit my criterion, all of my participants happen to be female.

I then used snowball sampling to identify student participants. Snowball sampling is useful for gaining access to participants who may be difficult for a researcher to contact without an intermediary. In this type of sampling, members of a population introduce the researcher to other members of that population (Turner, 2019). For my research, I asked the teacher participants to pinpoint their students who had started learning how to play a string instrument in
a fully virtual environment. Once they had identified students who met this criterion, I contacted their parents via email addresses provided by the teacher. After they received an Informed Consent form (see Appendix A) and a Minor Assent form (see Appendix B) the students, with parental consent, agreed to be surveyed and interviewed. One (1) student of each of the teacher participants agreed to participate in this research, making a total of three (3) student participants who were surveyed and interviewed for this study.

**Qualitative Research**

This study uses Qualitive Research. Qualitative research focuses mainly on understanding and more clearly explaining the things that we experience in our world (Bresler, 1992). By using qualitative research, I was able to collect data regarding how teachers of beginner string students experience building and fostering positive teacher-student relationships in a fully virtual environment. Qualitative research allows researchers to examine events or experiences from multiple views for the purpose of helping others. Bresler states, “Often the qualitative researchers' commitments to multiple interpretations become manifest in a desire to assist practitioners to interpret the situations for themselves. The intent of research then may become the provision of vicarious experience for report readers who will draw their own generalizations, combining previous experience with new. It often is research specially designed to assist practice” (1992, p. 67). My qualitative research is further informed by phenomenology, which simply means that my research comes from studying the nature of everyday things (Willig, 2008). Conducting a qualitative study allowed me to focus on relationships between
students and teachers. I was able to collect data by interacting with my participants through interviews.

**Data Collection**

My research process required me to select teachers of beginning string students who taught in a fully virtual environment, as well as their students who had begun learning how to play their instrument in a fully virtual learning environment. Once I had obtained these participants and they had completed Informed Consent forms (see Appendix A) and Minor Assent forms (see Appendix B), I asked the participants to complete a short survey. This survey was given electronically using Microsoft Forms (see Appendix C). The questions in this survey allowed me to gain some insight into the general backgrounds of each participant. After reviewing the survey responses, I designed interview questions to further explore each participant’s experience (see Appendix D). I then used email communication to schedule an interview with each participant. I gave participants the choice between using Zoom or Microsoft Teams as the digital platform for their interview. With each participant’s permission, I used the built-in recording feature of each digital platform to record the conversation. After the interviews were completed, I transcribed the interviews, assisted by Kaltura captioning software.

**Analysis**

My data analysis plan included Thematic Coding which allows researchers to examine similarities, differences, and relationships found in interview data (Charmaz, 2014). I chose this type of analysis because it allowed me to examine the data and derive codes after the data was collected rather than creating pre-set codes before I began my research. This allowed me to
examine the phenomena of teaching beginner string students in a fully virtual format without any preconceived notions of what I would find.

First, I read the survey responses and the interview transcripts and created an initial list of codes. As I examined the data, I used to highlighters to color-code and make note of each new code that I found. After completing this step with all six (6) surveys and interviews, I then reviewed my list of codes and looked for emerging themes that connected several codes together using a mind map. I then reviewed the surveys and interviews for a second time, searching for the themes that I had identified. Again, I used various colored highlighters to indicate related themes. After reviewing the data for a second time, I narrowed down my themes to three key themes.

In Chapter Three I described how I designed this Qualitative Research project informed by phenomenology. I explained each step of my process and how I surveyed and interviewed teachers of beginning strings and their students who started in a fully virtual format. I also described in detail my method of analysis, which was thematic coding. In Chapter Four I will report my findings.
Chapter IV: Findings

In the previous three chapters I introduced this study about teachers and students building relationships in a fully virtual beginning strings learning environment, a review of literature related to the study, and a description of the methodology and my approach to analysis. Here, in Chapter Four, I will report the findings from the data. As described in Chapter Three, I surveyed and interviewed three teachers of beginning string players who had taught beginning strings students in a fully virtual environment. I also surveyed and interviewed three beginning strings students who had started learning to play their instrument in a fully virtual learning environment. For ease of summary and discussion, I will henceforth use pseudonyms for all my participants. I will refer to the teachers as Esther, Laura, and Carol. I will refer to the students as Henry, Elizabeth, and Tyler. The results of this data collection are as follows.

First Cycle of Coding

In the first cycle of coding, thirty-three codes were identified throughout the interviews. These codes are as follows:

1. Lessons in virtual settings
2. Digital platform or tool
3. Asynchronous communication and learning
4. Face-to-face interaction outside the lesson
5. Type of instruction/string pedagogy
6. Asking students questions/conversation
7. Students’ confidence and motivation
8. Before/after the lesson
9. Communication in-person
10. Student responses to teacher actions
11. Students with peers versus alone
12. Teacher sharing personal info/likes and dislikes
13. Schedule challenges
14. Practicing between lessons
15. Overall student progress
16. Tuning instruments
17. Challenging students and setting goals
18. Giving students choices
19. Comparing virtual settings to in-person settings
20. Instrument position/posture
21. Obstacles in a virtual setting
22. Impact of virtual teaching environment on enrollment numbers
23. Playing games in the lesson
24. Teacher complimenting students
25. Symbol/note recognition and recall
26. Teacher adjusting to meet student needs
27. Teacher apologizing to student
28. Teacher showing empathy and encouragement
29. Teacher feelings about virtual lessons
30. Students’ home environment during lesson
31. Compare starting new students virtually versus second year students
32. Obstacles in in-person settings
33. Story about a unique experience in a lesson

After identifying these codes throughout the interviews, I used a mind map to combine similar ideas and to make note of topics that appeared together often throughout the interviews. This process took time, as I reviewed each interview and looked for codes that appeared most often throughout all six interviews.

First, I connected all codes that related to the idea of engaging in conversation during the lesson. The codes listed above that related to this idea were lessons in virtual settings (1), asking students questions/conversation (6), before/after the lesson (8), student responses to teacher actions (10), and teacher sharing personal info/likes and dislikes (12). The participants used words such as ‘ask questions’, ‘small talk’, ‘chat’, and ‘likes and dislikes.’ These conversations took place between the teachers and students during transitions period, as well as before and after the lesson began.

Next, I noted that several codes connected to students’ confidence and motivation (7). The codes that related to this were challenging students and setting goals (17), giving students choices (18), teacher adjusting to meet student needs (26), and teacher showing empathy & encouragement (28). These codes often appeared alongside each other and also connected further
to several other codes. Challenging students and setting goals (17), further connected to practicing between lessons (14), and overall student progress (15). Teacher showing empathy and encouragement (28), connected further to teacher apologizing to students (27), and teacher complimenting students (24), which are both examples of a teacher giving positive verbal feedback. From these interconnected groupings, I gathered that students’ motivation, students’ progress, and teachers giving positive verbal feedback were all important topics to explore further.

Another significant group of codes revolved around obstacles in a virtual setting (21). The following codes could all be summarized as obstacles in the virtual environment: schedule challenges (13), tuning instruments (16), comparing virtual settings to in-person settings (19), instrument position/posture (20), impact of virtual teaching environment on enrollment numbers (22), symbol/note recognition and recall (25), and students’ home environment during lessons (30). Some words used by the participants to describe these obstacles are ‘don’t respond’, ‘not listening’, ‘muted’, ‘doesn’t match up’, ‘glitchy’, ‘struggles with note reading’, and ‘sound cuts out’. Because of the numerous references to challenges in the virtual environment, I realized that I needed to further explore this topic.

The last significant grouping on the mind map centered around type of instruction/string pedagogy (5). The following codes all related to this idea: digital platform or tool (2), asynchronous communication and learning (3), and playing games in the lesson (23). I took note of when participants used words such as ‘echoing’, ‘air bowing’, ‘playing duets’, ‘note reading’, and ‘games’ when identifying these codes. I also noticed that these codes often appeared alongside students’ confidence and motivation (7).
Through the process of mind mapping, I found that some codes could be eliminated: face-to-face interaction outside the lesson (4), communication in-person (9), students with peers versus alone (11), teacher feelings about virtual lessons (29), compare starting new students virtually versus second year students (31), and obstacles in in-person settings (32). I eliminated these codes during further cycles of analysis as they only appeared once or twice throughout data and did not connect with any other codes.

Second Cycle of Coding

After mind mapping the codes from the first cycle of coding, I identified nine (9) major subthemes that emerged from this process. I then completed a second cycle of coding searching for these nine subthemes. A summary of my findings for each subtheme after the second cycle of coding is as follows.

Obstacles to Virtual Learning and Instruction

Numerous obstacles to instruction in a virtual environment were discussed in all six (6) interviews. The three teacher participants noted similar obstacles in their interviews. Teachers expressed that ‘playing instruments together virtually does not work well.’ Teaching proper playing position, posture, and bow holds is difficult through a video format, especially for cello and bass players. The teacher cannot touch and manipulate a student’s fingers to the correct position through a screen, and teachers must stop a student’s playing in order to fix a problem rather than giving a quick verbal reminder. ‘Little conversations’ during transitions are lost, as students log on for lessons when they are set up and ready to go. ‘Time delays’ and ‘internet glitches’ interfere with sound and video quality, causing the sound and image to fall out of sync.

Student participants also indicated several obstacles to learning in a virtual environment. Henry indicated that, ‘It gets kind of gloomy, and I don’t like being on mute.’ Tyler mentioned
that he has a bad habit of looking at his thumbnail image instead of the camera, stating, ‘it’s boring looking at a tiny little circle.’ The students also noted that sometimes the camera froze, and it was difficult to hear their teacher. They also experienced challenges with internet connections which caused glitches and delays in sound and video.

**String Pedagogy in a Virtual Learning Environment**

A variety of string pedagogy techniques were mentioned throughout all six (6) interviews. Esther stated, ‘I do a lot of echoing where I’ll play and the kids will play back to me.’ She further said, ‘I do think there are benefits to that echoing because it does develop a little more independence and develop more confidence in their own playing.’ To work on symbol recognition and recall, Laura employed the use of games. She stated, ‘We always ended with games. So we have…Around the World, or we play Alphabet Soup, or Treasure Hunt or something like that at the end of the lesson.’ She also noted that she sometimes has her students sing the lyrics of the songs they are learning to play on their instruments. Carol mentioned that she plays her instrument a lot while teaching lessons and uses her instrument to demonstrate various techniques to her students. She also described, ‘One key activity is playing mini duets virtually, and it works very well when performing different notes and not the same line.’

The students also noted a few additional lesson activities. Henry stated, ‘We have to practice the songs that we’ve learned. And she plays some fancy parts on the piano.’ Elizabeth shared, ‘We would pick a song…and we would play that either in chunks or someone would have to mute their microphone, and then we would play it together… I feel like playing it in chunks helps me learn it. And then playing it together is like a review.’ She went on to explain that sometimes, ‘we air bow it,’ and described that this is when you move your bow up and down in the air to the rhythm of a song before playing.
**Learner Motivation**

Throughout all six (6) interviews, the participants either directly or indirectly discussed learner motivation. In her interview, Esther talked about motivation in relationship to her students remembering to attend their lessons. She stated, ‘The kids have been really motivated to show up to lessons… I would say 85% of my students remember their lesson and remember their instrument on the day of their lessons. So that to me shows that the kids are invested.’ When speaking about an individual student, Esther also said, ‘Giving her those opportunities to challenge herself a little bit I think motivates her. Which ties in well with [the fact that] she practices at home and she’s learning new stuff pretty quick.’

Laura talked about motivation in relation to games that she incorporates into her virtual lessons. She stated, ‘Around the World is…it’s three-by-five cards with symbols on it, and they loved that game! Oh my gosh, I can’t get away with not playing it.’ When speaking about an individual student she said, ‘He’s really enjoying [learning cello]. You can tell he’s thinking through how to play the instrument because it’s not his normal positioning with the piano…[He’s motivated by] learning music. He definitely is. He really loves playing music and he gets into all of it.’

Carol also indicated that her virtual student was motivated by playing their instrument. She stated, ‘He’s practicing. Loves it. Follows directions well. He loves to play pieces. So when he sees pieces he knows…Like Oh Susanna. He just went into Oh Suzanna and started playing it.’ She also said, ‘What I can see [in] him, how focused he is…I thought, “he’s super focused,” probably the best student I’ve had here for an elementary student just starting from scratch.’

The student participants also indirectly mentioned activities that motivated them in their string lessons. Henry, who took piano lessons prior to beginning the cello, talked about how he
likes to use his knowledge of the piano to help him learn this new instrument. He stated, ‘Then I have to guess like the note names on like the lines. And so that makes it a lot easier. I’m like, “Hey, can I guess? Is C3 an E?”’

When Elizabeth was asked what her favorite part of lessons is, she responded, ‘I really like to play in lessons. Play cello. Like, after warm-up when we’re learning stuff new.’ Similarly, when asked the same question, Tyler responded, ‘I like learning new songs… And sometimes I’ll look up my favorite songs that I like, and then look up the sheet music, and then try to play them on the violin… I like learning new things.’

Positive Verbal Feedback

The teacher’s use of positive verbal feedback was noted in all six (6) interviews. Esther stated, ‘I do a lot more reassuring of like, “don’t worry if you make a mistake, it’s no big deal, this is brand new,” which I do in-person anyway, but it’s an even more important thing because the kids are playing by themselves so much more in the virtual setting.’ Carol also shared how she praises her students when they learn something new. She stated, ‘You just kind of pump them up and be proud of what they have accomplished.’ Similarly, Laura noted the importance of acknowledging and apologizing to students when something did not work well in the lesson. She stated, ‘Oh, here’s a difficult thing. Let’s figure out a different way… So I think what they see and feel is that I care.’

Students appreciated when their teachers gave positive feedback and demonstrated empathy. Henry shared, ‘She’s really nice. And she’s fun to have as a teacher because she understands a lot how it’s hard, and it’s easier if you took piano.’ Similarly, Tyler shared, ‘Sometimes, when I’ll get something right, she’ll go, “woohoo!” and clap…’
positive person, and she’s encouraging, and she gives good feedback… If I get something wrong, she’ll tell me how to play it correctly.’

**Engaging in Conversation**

In all six (6) interviews, each participant described how conversation played an important role in their lesson experiences, both with in-person and virtual lessons. The teacher participants described how they ask their students questions at the beginning or end of the lesson to find out how their students’ week went and to learn a little about their interests outside of music. For example, Laura stated, ‘I would always ask them a silly question, and they would have to share “what is your favorite word,” or “what is your weirdest food you’ve ever eaten.”’ The student participants indicated that they enjoyed connecting with their teachers by talking about likes and dislikes or by talking about the songs they were learning in their lesson. Elizabeth shared about her teacher, ‘I really like her as my teacher because she always asks me how’s my day going, and anything new, and stuff like that.’ Similarly, Tyler shared, ‘We’ll talk a little bit. Like when I was playing Silent Night, she told me that she used to take German… We sometimes make a little bit of small talk, but it’s mostly related to music.’

**Student Progress and Growth**

Another common theme mentioned mostly in the three (3) teacher interviews was a discussion of the students’ overall growth throughout the year. Esther indicated that her students had demonstrated social growth throughout the year in their virtual lessons. She stated, ‘Kids have been talking more and… having more of a conversation with me as the year’s gone on… That’s really cool that they’re finally opening up their personalities and stuff as the year’s gone on.’ Esther also noted her students’ progress in regard to learning their instruments. She stated, ‘It’s definitely taking longer to get through some of the techniques and the skills than it would
have in-person… I would say most of my kids are at least a good four or five pages backwards in the book from maybe where they would normally be at this time in a year.’ Regarding one student in particular, however, Esther stated, ‘She’s probably one of my fifth graders who’s further along in the book than most of the others because she’s been putting in the practice at home and coming to all of her lessons.’

Laura found that she needed to accept that, overall, her students’ skills developed in a virtual learning environment were not going to be at the same level as when they were taught in-person. However, when discussing one individual student with a more extensive music background who had learned to read notes in piano lessons prior to beginning his virtual string instrument lessons, she stated, ‘I don’t think he practices very much. And [his mom] always apologizes for him, but he’s keeping up. I mean, he is doing better because of that note reading thing.’

Carol experienced a similar disparity between her students’ progress. Regarding one virtual student, she shared, ‘I’m successful. We are through book 1, we’re in book 2. That doesn’t happen in normal [in-person] fifth grade violin anymore.’ However, in regard to another student she teaches virtually, she said, ‘I don’t think he’s practicing much, and he’s having a hard time with posture.’

**Impacts of Virtual Lesson Format**

The impacts of a virtual lesson format were discussed in all three (3) teacher interviews. While two teachers seemed focused on the obstacles, one found great benefit to teaching her
students in a virtual format. Esther and Laura noted several negative impacts, while Carol seemed focused on the positive.

Esther indicated that the virtual lesson environment made it more challenging to connect with her students conversationally. She stated, ‘I’ve noticed that their answers to questions are a lot shorter, and the kids go into a lot less detail.’ Laura noted a similar experience in her interview. She stated, ‘I usually enjoy the connecting [with my students], but this year I’ve had kids not interested at all in what I have to offer them. And, you know, if I tell jokes they’re stone-faced…Especially for elementary students who choose this program, it’s been really sad.’

Esther also discussed the impact of the virtual lesson schedule and how it compares to a typical weekly in-person lesson schedule. She stated, ‘This year because of how the schedule worked out, I tried to keep [their lessons] at the same time during the day, but they were definitely not the same day during the week.’ Esther would see her students for virtual lessons, ‘once every week and a half or two weeks.’ She goes on to say, ‘So even though I have less students [in the virtual environment], I still feel like I don’t know them as well as I know my in-person students even when I have twice as many of them.’ Laura also noted the impact of a virtual lesson format on enrollment in her program. She stated, ‘The groups were a lot smaller. Last year…one of my classes was 35 students. That same class has five this year. Our biggest class has seven, and that’s really small.’

In contrast to Esther and Laura, Carol noted several positive impacts brought about by the virtual lesson environment. When describing lessons with her one-on-one virtual student she said, ‘When he pops up, I’m so excited to see him; I can’t tell you. It’s really good because I see him every week for 20 minutes, every Wednesday. That is huge!’ In comparison, Carol stated about her in-person students, ‘We’re on [an] eleven days [rotation] now in our situation. Eleven
days in-between lessons. There is only three times per month if we’re lucky. Otherwise they see [me] twice a month.’ For Carol, ‘Doing these virtual lessons, it’s the happiest day of my life. Seriously, it’s a joy. I can’t tell you. It’s a joy to see my student online.’

**Flexibly Meeting Students’ Needs**

One of the key themes noted in all three (3) teacher interviews, either directly or indirectly, was the teachers’ flexibility in adjusting plans or expectations to meet their students’ needs. The teachers all mentioned the use of learning management systems to provide videos that were accessible to their students outside of lessons. They also mentioned going out of their way to help their students get their instruments tuned in between lessons.

Laura described her experience of adjusting her expectations in response to her students’ struggles. She stated, ‘What I had to do is just step back and not freak out about the fact that we were not where I felt we needed to be. A lot of kids struggled with note reading, which I wasn’t prepared for.’ She goes on to describe, ‘So I ended up just backing off the note reading and giving them note number charts because it wasn’t worth it to me to have them lose interest or to not be able to play. Because that’s what they wanted to do and that’s what I wanted them to do. So, anything that got them playing.’

Carol responded to her student’s challenges with note reading in a similar fashion. She stated, ‘I let them write some notes in because I think by writing and actually physically doing something, they might remember better… I don’t get all worked up about it… They tell you what they need.’ Carol also noted that she had to limit her expectations for what she would accomplish in a lesson. She stated, ‘we’re going to work on these two pages only… And then next time we’ll play through that, practice that, move forward.’
In contrast, Esther noted that one of her virtual students was grasping concepts rather quickly. She stated, ‘She picks things up really quick, so I can kind of challenge her a little bit… Sometimes I’ll push her and we’ll do…a whole line, and then she’ll play the whole line back to me.’

Lesson Anecdote

One unique aspect of the three (3) teacher interviews is stories about lesson experiences that naturally arose in response to my questions. These stories stood out because each one illustrates an unplanned moment of connection between the teacher and their student.

Esther. I really miss just getting to see them in person and having those interactions and those conversations before, after, and even during the lesson, right? The kids will start talking and they'll get off topic and start talking about something that's happening this weekend and you'll reel them back in. So, you know, for example, the other day in one of my virtual lessons I had a kid who was telling me about how he's really in to “re-mixes” he called it. Like techno music, how they'll take a song and do a re-mix of a song with techno. And he'd go, “just give me any words.” You know on Microsoft Teams it says, “You have joined now as an attendee” ... So, he took that phrase and did a little rap re-mix of it in the middle of his lesson. And it was really cool, and then I had to reel him back in... That was the first time I’ve really had one of those experiences this year, and those are the kind of things that happen on a weekly basis in an in-person setting. So, while we got off topic, it was still a pretty cool conversation. I’m looking forward to those kinds of things again.
Laura. So basically, what our book is, is a bunch of folk songs from around the world. And so [this student] really loves playing music and... because he knows a lot, I think he goes and researches more about the piece that we're learning. So, for example, today's piece was One Jar of Apples, which is a Hungarian song, and you know, he wants to know how to play it, he wants to know where it’s from, what they're doing. And so, I haven't figured out if that's just stalling me or he's really interested!

Carol. We listened to Caprice No. 5. [A] 6th grade violinist said, “I saw this, you have to see this!” Okay. So, at the end I let them. I got on Caprice No. 5. So we listened to 5, we listened to 24. I like 24 so that was [my choice]. We went back and we listened to No. 7 and No. 2. All of the Caprices. I mean, how cool is that?... So that was so fun! We found out about each other. We had so much fun. It was such a pleasant ending to the school day, and it was just so cool. And wow, I would never guess this from my little 6th grade violinist. I thought, “Wow, how did you find this?” And we talked about that, and we just shared, he shared back. So that was really neat. So yeah, just sharing...somehow sharing with your students. Somehow, back and forth. What are their loves? What do they love? What do they like? Can they do it on their string instrument? And how can we get to what they like to hear and listen to? What's their favorite? And then share...what's some of your favorite? What are mine, as the teacher?

The second cycle of coding confirmed the importance of the nine (9) subthemes I had identified. Each subtheme was coded numerous times throughout the surveys and interviews.
Statements that I had not even noticed during the first cycle of coding became more prominent as I focused on the subthemes identified above.

**Third Cycle of Coding**

After concluding the second cycle of coding, the participants’ words made it evident that the environment, teachers, and students were key themes that recur in the data. Thus, the nine (9) subthemes could be grouped into three major themes: Ramifications of Teaching in a Virtual Environment, Teacher Actions in a Virtual Environment, and Student Responses to the Virtual Environment and Teacher Actions.

Figure 1

**Major Themes & Subthemes**

<table>
<thead>
<tr>
<th>Major Themes</th>
<th>Ramifications of Teaching in a Virtual Environment</th>
<th>Teacher Actions in a Virtual Environment</th>
<th>Student Responses to the Virtual Environment and Teacher Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corresponding Subthemes</td>
<td>1) Obstacles to Virtual Learning and Instruction</td>
<td>1) Positive Verbal Feedback</td>
<td>1) Student Progress and Growth</td>
</tr>
<tr>
<td></td>
<td>2) Impacts of Virtual Lesson Format</td>
<td>2) Engaging in Conversation</td>
<td>2) Learner Motivation</td>
</tr>
<tr>
<td></td>
<td>3) String Pedagogy in a Virtual Learning Environment</td>
<td>3) Flexibly Meeting Students’ Needs</td>
<td>3) Lesson Anecdote</td>
</tr>
</tbody>
</table>

Note: This chart illustrates the hierarchy between the three major themes and the corresponding subthemes.
Figure 2
Relationships Between Major Themes

Note: This figure describes the interaction between the Virtual Environment, Teacher Actions, and Student Responses as evidenced by the data.

**Ramifications of Teaching in a Virtual Environment**

The third cycle of coding revealed the pervasiveness of the virtual learning environment in the participants’ interviews. Various ramifications of teaching in a virtual environment were coded ninety-five (95) times throughout all participants’ interviews. The three subthemes that correspond to this major theme are Obstacles to Virtual Learning and Instruction, Impacts of Virtual Lesson Format, and String Pedagogy in a Virtual Learning Environment. Each of these subthemes was coded many times, as described below.

**Obstacles to Virtual Learning and Instruction.** Numerous obstacles to virtual learning and instruction were identified by all teacher and student participants. This subtheme appeared forty-two (42) times throughout the interviews and surveys. All participants cited technology issues that impeded the instructional process, such as, ‘camera freezes’, ‘gets out of sync’, and ‘don’t like being on mute’. There were a few differences between the obstacles listed by the teacher participants and the student participants. The teacher participants noted the particular challenge of teaching posture and instrument position via a video platform. As Esther noted,
‘being able to go over and physically change their bow hold on their instrument, or their position…you just can’t do those through a virtual setting.’ The student participants particularly noted the challenge of not being able to play with their teacher ‘without someone’s microphone muted.’

**Impacts of Virtual Lesson Format.** Another subtheme related to this major theme describes the various impacts of the virtual lesson format. This was coded twenty-one (21) times throughout the interviews. Most of these impacts were noted by the teacher participants. Since the teachers all have prior experience instructing beginning string students in in-person settings, they noted several differences between in-person and virtual learning environments. Esther stated, ‘Even though I have less students, I still feel like I don’t know them as well as I know my in-person students even when I have twice as many of them. You just get more opportunities to talk to them.’ She also noted, ‘It’s definitely taking longer to get through some of the techniques and the skills than it would have in-person. Partially because we’re seeing them less so they’re not getting as many repetitions with us as the teacher.’ Since the student participants had not yet learned an instrument prior to beginning virtual string lessons, they did not mention this subtheme as much. Tyler’s statement sums up the students’ observations: ‘being on a device changes things, because interaction in-person is different than interaction on a device.’

**String Pedagogy in a Virtual Learning Environment.** The final subtheme in this theme focused on string pedagogy and teaching techniques used in a virtual environment. This subtheme was coded thirty-seven (37) times throughout the surveys and interviews. The teacher participants mentioned numerous strategies they used to teach in a virtual environment. The most common pedagogies mentioned were, ‘playing’, ‘echoing’, ‘duets, ‘playing games’, ‘air-bowing’, and ‘review’. While the student participants did not mention any new teaching
techniques, their accounts confirmed their teacher’s statements. The students described how their
teachers would help them learn a new song by echoing it in ‘chunks’, or playing duets, or
playing games to review concepts. All the students stated that they enjoyed playing in their
lessons, whether that was alone or with their teacher.

**Summary.** The ramifications of teaching in a virtual environment, which is the first
major theme, are far-reaching in scope and have a variety of impacts on both teachers and
students. As noted by the teacher participants, the virtual environment required them to find
teaching techniques that would work well in this particular setting. The virtual environment also
presented challenges when teaching particular aspects of string musicianship, such as posture.
And, the virtual environment influenced how, and to what depth, they were able to get to know
their students. The student participants noted the challenges and obstacles that accompany
learning via a digital platform.

**Teacher Actions in a Virtual Environment**

The next major theme describes the teachers’ actions in a virtual environment. These
actions were heavily influenced by both the unique learning environment, as well as the students’
needs. This theme was coded one-hundred and eight (108) times throughout all surveys and
interviews, making it the most frequently coded theme of the three. The subthemes that relate to
this major theme are Positive Verbal Feedback, Engaging in Conversation, and Flexibly Meeting
Students’ Needs. These subthemes are described in the following paragraphs.

**Positive Verbal Feedback.** All the teacher participants mentioned the importance of
encouraging their students with positive feedback. This subtheme was coded seventeen (17)
times. They used words like, ‘reassuring’, ‘compliment’, ‘praise them’, and ‘pump them up’. The
student participants affirmed the importance of positive verbal feedback. Two of the students
quoted statements that their teachers used to encourage them in lessons. Henry explained that when he asked for help with a difficult song, his teacher reassured him by telling him, ‘even middle schoolers can’t do that!’ Tyler shared that his teacher would say, ‘woohoo!’ and clap when he conquered a new challenge in his lesson. He also stated that one of the things he enjoys about virtual lessons is, ‘getting patted on the back figuratively’.

**Engaging in Conversation.** Conversation between the students and teachers was another subtheme featured prominently throughout all surveys and interviews, and was coded thirty-one (31) times. All the teachers described how they begin the lesson with a brief conversation with their students to find out their interests and activities. Words like ‘conversation starters’, ‘silly questions’, and ‘sharing’, were mentioned throughout the teacher interviews. The students noted how their teacher asked about their interests, or ‘my favorite’ things, or how their day was going. Tyler also mentioned that the small talk he had with his teacher was ‘mostly related to music’. Elizabeth mentioned that she enjoyed the one-on-one chats with her strings teacher, as she does not have this opportunity with her classroom teacher.

**Flexibly Meeting Students’ Needs.** This subtheme was coded sixty (60) times throughout the surveys and interviews, making this the most frequently coded subtheme. Most of these codes were found in the teacher interviews, as the teachers described the enormous flexibility that was required of them when teaching beginners in a virtual environment. Since the students have only experienced lessons in a virtual environment, they did not necessarily notice the adjustments their teachers made. The teachers used digital Learning Management Systems to create video content that their students could access outside of lessons. They also found unique ways to get their students’ instruments tuned, such as ‘curb-side tuning’, having a sibling bring the instrument to school, or driving to a student’s home to tune their instrument on the front
porch. The teachers also made adjustments to their expectations of how their students should progress according to individual students’ needs, whether that was increasing the pace of instruction, or slowing it down. Throughout these codes, the teachers constantly referred to something they learned about their students or the virtual learning environment. They used phrases like, ‘she picks things up quick’, ‘I realized that’, ‘I always thought’, or ‘you make adjustments.’

**Summary.** To summarize this second major theme, the teachers’ actions in the virtual environment reveal the extraordinary efforts made by the teachers to meet their students’ needs and to make the virtual teaching environment work as best as they could. Each teacher showed a willingness to adjust their expectations, go out of their way to help their students, regularly engage with their students through conversation, and encourage their students.

**Student Responses to the Virtual Environment and Teacher Actions**

The final major theme, student responses, was coded a total of ninety-one (91) times throughout the surveys and interviews. As illustrated in Figure 2, the students responded both to the virtual learning environment and to their teacher’s actions. These responses are summarized by the students’ overall progress and motivation and are further illustrated by lesson anecdotes told by the teacher participants.

**Student Progress and Growth.** The first subtheme related to this major theme describes the students’ overall progress and growth. The teacher participants described their students’ advancement on their instrument by using phrases like, ‘she’s making good progress’, ‘further along in the book than others’, ‘a few pages behind normal’, ‘he’s keeping up’, and ‘we are through book 1’. The students used phrases such as, ‘I think I learned it pretty fast’, or ‘I practice every day’. Tyler stated that one of his favorite aspects of lessons is ‘getting some constructive
criticism…it’s really helpful because then I know how I can improve.’ Overall, there were thirty-eight (38) instances of student progress and growth coded in the data.

**Learner Motivation.** The students’ motivation to learn their instrument in the virtual learning environment was impacted by many factors. This subtheme was coded forty-eight (48) times. Teachers noted their students’ motivation with phrases like, ‘motivated to show up to lessons’, ‘kids are invested’, ‘really hard worker’, ‘motivated [by] little challenges’, ‘very dedicated’, ‘loves playing music’, and ‘focused, engaged, and excited’. The students also described their motivation for learning an instrument. Henry stated, ‘I wanted to play more than one instrument.’ He also described the numerous ribbons he has on his cello scroll for passing challenge songs through the first several months of lessons. Elizabeth talked about how she is excited to play with her peers in an ensemble someday. She also stated, ‘I really like to play in lessons.’ Tyler acknowledged that his parents, ‘suggested that I should play something,’ so he chose the violin since, ‘Sherlock Holmes played the violin.’ Now that he has been taking lessons for several months, Tyler says ‘playing the songs’ is his favorite part of lessons. He frequently looks up sheet music for songs he enjoys and attempts to figure out how to play them on his own. Tyler also gave two recitals for family members using a video platform, and regularly gives his parents ‘request time’ where, ‘I’ll ask them what they want me to play.’

**Lesson Anecdote.** The final subtheme in this major theme are the lesson anecdotes shared by the teachers in their interviews. These stories arose naturally in response to my questions, and I noted that these stories often illustrated a student’s motivation, overall progress, or deepening relationship with their teacher. While these stories appear earlier in this chapter, I want to reiterate here that while this particular subtheme was coded only a total of five (5) times, it seemed to uniquely highlight the genuine connection between the teachers and their students.
Summary. In general, this major theme explored the students’ responses to the virtual learning environment and to their teacher’s actions. As described above in the related subthemes, these responses were varied and unique. While the student participants I interviewed had generally positive responses to their teachers and the learning environment, I must acknowledge that the teachers all alluded to other students who had not responded as favorably. The teachers stated that some of their students were struggling with posture, technique, or note reading and had not progressed as far as students normally would in an in-person setting. Others noted the decline in enrollment numbers due to the virtual lesson format.

The third cycle of coding confirmed the importance and prevalence of the three major themes in the data. After reviewing the codes for each major theme and subtheme from the third cycle of coding, I realized that these three themes often overlap and interweave throughout the surveys and interviews.

Conclusion

In Chapter 4, I described the findings that were revealed through coding and analyzing my data. First, I summarized the list of codes generated from the initial review of the data. Next, I described the nine (9) subthemes and illustrated them with direct quotes from the participants. Finally, I explained the three (3) major themes of this study: Ramifications of Teaching in a Virtual Environment, Teacher Actions in a Virtual Environment, and Student Responses to the Virtual Environment and Teacher Actions. In Chapter 5, I will discuss these three (3) themes at length and discuss the implications for teachers of beginner string students instructing in a fully virtual learning environment.
Chapter V: Discussion and Implications

In the previous four chapters, I introduced this study about beginning strings teaching in a fully virtual environment, provided an overview of related literature, described my methodology for research and analysis, and shared the findings from my data. In this chapter, I will present a discussion of my findings for each of the major themes described in Chapter Four. I will also explore the implications of this research for music educators and students who are interacting in a fully virtual learning environment, as well as possibilities for future research.

1st Theme: Ramifications of Teaching in a Virtual Environment

During the COVID-19 pandemic of 2020, teachers across the country began to encounter unprecedented challenges as they strove to meet the needs of their students through technology and digital means. More specifically, music teachers began to face the obstacle of how to keep students engaged in learning an instrument, while also keeping them safe and following district guidelines. Many school districts and teachers turned to music lessons through video platforms to meet this need.

My own experience as a teacher of beginning string players was vastly altered during the COVID-19 pandemic. I was no longer able to travel from building to building throughout my school district to work with beginning string lesson groups on a weekly basis. Instead, I met with my students for one-on-one virtual lessons once every eight school days. The obstacles I faced with my students in our virtual lessons mirror the experiences faced by the participants in my research study. Internet problems, applications unexpectedly malfunctioning, sound ‘glitches,’ and video ‘getting out of sync’ were daily occurrences for me and my students. The difficulty of teaching bow grip, angle, weight, and speed, and figuring out how to help cellists and bassists with the cumbersome task of proper playing position caused me to feel like a brand-new teacher just figuring out a new bag of tricks.
Because of the obstacles of the virtual learning environment, I had to experiment with various tried-and-true teaching techniques to figure out what string pedagogies would work well in a virtual format. Like Esther, Laura, and Carol, I found myself focusing on activities that did not require me to play at the same time as my students, such as echoing, playing games, and air-bowing. Keeping my students playing was the main focus of my approach to lessons in a virtual environment, and this was echoed by the teacher participants in my study. As Laura stated, ‘I want them to play and enjoy their instruments so much, it doesn’t matter if they have something wrong… That’s what they wanted to do and that’s what I wanted them to do.’

I found that the overall impacts of the virtual lesson format were varied and unique depending on each participant’s experience. The format of virtual lessons had several negative impacts for me, which were similar to two of my research participants: Esther and Laura. We all saw enrollment in our string programs drop as students lost interest when they found out their lessons would not be in-person. Another negative impact of the virtual lesson format for Esther, Laura, and myself was overall student progress. I noticed that, in general, my beginning students were not progressing as quickly since I was not seeing them on a consistent weekly basis which was similar to Esther’s experience. She stated, ‘it’s definitely taking longer to get through some of the techniques and the skills than it would have in-person.’ Laura taught her virtual students in small groups rather than one-on-one. She noted that, ‘I’ve had kids not interested at all in what I have to offer them… I make them mute, so the only person they really hear is me. They lose all that joy of playing within an ensemble.’ Both Laura and Esther expressed a desire to return to in-person lesson formats with their students. Reflecting on my own experiences in the virtual classroom, I would especially agree with Esther’s statement when she said, ‘I really miss just getting to see them in-person.’
It was fascinating to note that Carol’s experience with virtual lessons was vastly different from Esther, Laura, and myself. While the three of us experienced having a large number of virtual students, Carol only had a few students who had lessons in a virtual environment. She was able to meet with her virtual lesson students for a weekly one-on-one lesson, while she also met with groups of in-person students on an eleven-day rotation. Carol noted that one virtual lesson student was, ‘through book 1, we’re in book 2. That doesn’t happen in normal [in-person] fifth-grade violin anymore. No, it takes us a whole two years to get through book 1 because of the way the [schedule] is.’ For Carol, one-on-one virtual lessons were a refreshing change from the challenging in-person lesson schedule she normally faced. She stated, ‘Doing these virtual lessons, it’s the happiest day of my life. Seriously, it’s a joy! I can’t tell you.’ The difference in Carol’s experience when compared to Laura, Esther, and me, seems to indicate that teachers have different experiences with virtual lessons based on their prior in-person teaching experiences.

It is also important to note that the virtual lesson format had positive impacts for individual students. Esther, Carol, and I found that certain students excelled in this format and made incredible progress. While some students seemed to be discouraged by the challenges of the virtual environment, others embraced this lesson format and made consistent progress. This seems to indicate that some student personalities are better suited to a virtual learning environment than others.

The ramifications of teaching in a virtual environment are varied and unique, depending on the prior experiences of the teachers. The virtual teaching environment presented both positive and negative impacts for teachers and students, and the effects of the virtual environment will continue to be discussed below through the second and third themes.
2nd Theme: Teacher Actions in a Virtual Environment

As I spoke with Esther, Laura, and Carol, I was impressed by their incredible efforts to make the virtual learning environment work for their students. Their comments reminded me of similar adjustments I made in my own teaching as a result of the virtual environment. We each faced a brand-new teaching situation, started with the strategies we knew about teaching beginning string students, and embarked on a long process of trial and error to figure out the best path forward.

Engaging in conversation with students was one teacher action that was crucial in the virtual learning environment. This was a pervasive topic throughout all the participants’ interviews, and also in my own experience as a teacher, both in in-person and virtual learning environments. I loved hearing each teacher describe the ways they interacted with their students by asking them silly questions, inquiring about their weekends, and sharing personal likes and dislikes. The students’ responses to these conversations were overwhelmingly positive. Each one noted that their teacher made an effort to get to know them and learn about them as a person. I believe that this affirms the importance of teachers connecting with their students individually.

As noted by Bernstein-Yamashiro in Chapter Two, a strong teacher-student relationship creates a solid foundation for learning a particular content area (2013).

Another teacher action that was important in the virtual learning environment was the importance of positive verbal feedback. I particularly enjoyed listening to the students’ descriptions of their teacher’s encouragement. The codes relating to positive affirmation, cheering and clapping, and empathy expressed by the teachers were frequently side-by-side with codes noting student motivation and progress. I believe that this is an important correlation and is further confirmed by Selby (2017) in Chapter Two. He stated, “Students will have many
different motivations for doing work, including grades, peer pressure, and teacher approval. But those motivators are all secondary to the satisfaction and pride students feel about their own accomplishments.” He further explains, “when delivering praise, focus on the success of your students and how it makes them feel. Encourage them to be proud of their accomplishments” (p. 200). I believe that the teachers in my study demonstrated this concept through the ways they encouraged their students.

The teacher participants showed extraordinary dedication through their flexibility in meeting their students’ needs in a virtual learning environment. As I conversed with each teacher, they mentioned an incredibly wide variety of things they had done to make the learning environment work for their students. Driving to students’ homes to tune their instrument, making countless videos to review new skills, and inventing creative ways to teach bow grips without being physically present with their students are just a few examples of how these teachers rose to the challenge.

I believe that the most important theme of this entire study is teacher actions in a virtual learning environment. As I worked through each cycle of coding, I realized how important it is for teachers in a virtual learning environment to be flexible. This is an absolutely crucial part of making beginning string lessons possible in a virtual environment.

3rd Theme: Student Responses to the Virtual Environment and Teacher Actions

The most surprising and varied theme was student responses to the virtual environment and their teacher’s actions. I believe the reason for this as that every student is unique. Each child
has the capacity to respond differently to the influences of their environment and their teacher. That being said, I noticed a few general concepts that can be noted from this study.

The findings of my study indicate that learner motivation is an important piece of the puzzle when considering the success of learning an instrument in a virtual learning environment, specifically intrinsic motivation. As discussed in Chapter Two, intrinsic motivation is a key component of long-term learning in music. As Jagow (2007) stated, “if students are intrinsically motivated they will learn a subject out of interest and an attraction for challenge” (p. 138). The three student participants in this study all had positive experiences learning how to play a string instrument in a virtual environment. Each student demonstrated intrinsic motivation through statements in their interviews. For example, Elizabeth stated, ‘I really like to play in lessons…when we’re learning new [songs].’ Tyler also demonstrated intrinsic motivation by stating, ‘I like learning new songs. Sometimes I’ll look up my favorite songs…and then look up the sheet music and then try to play them on the violin.’ I believe there is a strong connection between these students’ intrinsic motivation and their overall progress on their instrument.

Another general concept that I noted in this study, and my own teaching experiences, is that student progress is somewhat unpredictable in the virtual environment. Some students seemed to excel in their virtual one-on-one lessons. Others seemed to struggle with the format and the lack of in-person connection. The student participants I interviewed for this study all stated that they enjoyed playing their instrument and having lessons. They all learned and made progress on their instruments in the virtual environment, but they all expressed a desire to be in-person again. I believe this shows that the format of virtual lessons fits some student’s learning needs and personalities better than others.
The lesson anecdotes told by the three teacher participants are worth mentioning here in the discussion of student responses. As noted in Chapter Four, these anecdotes illustrate moments of genuine, spontaneous connection between a student and their teacher. Teachers must realize the organic nature of teaching. Of course, they must be prepared with the knowledge and skills necessary for connecting students with their content, but they must also leave room to listen to their students, respond to their needs, and let their personalities and interests shine. I believe these unplanned moments are the ones that help solidify the teacher-student relationship in ways that a lesson plan cannot.

This study indicates that student responses to the virtual environment and teacher actions will vary, as each student is unique. As teachers and students engage in the journey of teaching and learning in a fully virtual environment, it is important for them to realize the constraints of this unique setting, and the wide variety of outcomes it may bring.

Implications

There are several implications from this study that are important for strings teachers who are instructing in a virtual environment. First of all, teachers must have the ability to be flexible and creative. As noted above in the discussion of the second theme, the teacher participants frequently spoke of ways they adjusted to meet their students’ needs and smooth the obstacles created by the virtual learning environment. Additionally, teachers must have patience as they face challenges presented by technology glitches and physical separation when teaching instrument position and kinesthetic skills. They must also demonstrate a positive attitude, enthusiasm, and encouragement towards their students as they face these challenges. Finally, as seen in the lesson anecdotes told by the teacher participants, unplanned moments can be the most impactful as teachers find ways to connect with their students. Teachers should leave space for
spontaneity and be ready to capture a moment of connection with their students, even if it means leaving a particular learning activity for another day.

It is important for students embarking on the journey of learning a string instrument through a virtual environment to be patient and persistent. As described in Chapter Four, there are numerous obstacles to learning in the virtual environment, so it is important for students to expect these challenges and not become discouraged when they encounter them. Students must also be willing to ask questions and communicate with their teacher when they need help. Since the student and teacher are not physically in the same space, the student must verbalize when they encounter a problem since the teacher may not immediately notice.

Parents can help smooth the way for lessons in a virtual environment by ensuring their child has a stable, strong internet connection and an updated device. Since learner motivation is an important component of the success of virtual lessons, parents should find ways to foster intrinsic motivation in their child. An example of this was when Tyler’s parents had him perform recitals for his family members via a video platform so he could share his new skill with others. Parents can also demonstrate support by helping their child communicate with the teacher when a problem arises, like Elizabeth’s parents did when her cello got out of tune.

Lastly, there are a few implications that we can learn from this study for the field of music education at large. First of all, this study indicates a wide array of skills that must be present in teachers who are engaging with students in a fully virtual learning environment. They must be willing to flexibly meet student needs, quick to encourage their students, and ready to engage with their students through conversation. Teachers must also be adequately trained on the technology resources and platforms used to connect with students virtually.
Based on the findings of this study, I would like to continue exploring this topic further by following the progress of students who have begun learning a string instrument in a virtual setting and track their progress over time. I would like to further question: How do these students transition to traditional in-person lessons? Do they overcome the challenges of learning posture and technique in a virtual setting? Does their intrinsic motivation last through the next several years of musical study? How does their long-term relationship with their strings teacher grow as they shift to in-person learning? Music education faced enormous challenges through the COVID-19 pandemic. I would like to explore the long-term effects of this unique situation.

**Conclusion**

In Chapter One of this study, I explained the importance of this study and introduced my research question: *How do string teachers build and foster optimal teacher-student relationships with beginner string orchestra students in a fully virtual teaching environment?* In Chapter Two, I presented a review of existing literature that relates to this question. This review of literature created a framework for better understanding the findings of my data. Next, in Chapter Three, I presented a description of my research methodology, which was phenomenology, and plan for analysis, which was thematic coding. I also described specific steps taken in order to find research participants and gather data. In Chapter Four, I presented the findings that resulted from each cycle of coding that I used to analyze my data. I included numerous quotes from the participants to further illustrate the three main themes of this study. Finally, in Chapter Five, I offered a discussion of the importance of the results of this study, as well as implications for strings teachers, beginning strings students, parents, and the field of music education.

To conclude this study, I would like to share two final thoughts from the participants. I believe that Carol summarized the essence of this phenomenon from the teacher’s perspective
with her statement, ‘You just have to adjust.’ Finally, Tyler added an important summary of the experience of virtual learning through COVID-19 pandemic quarantine when he stated, ‘I feel like this has been a really great opportunity for the classmates and I to get to…persevere and get through something new that we didn’t expect together.’
References


http://journals.sagepub.com/home/mej


Appendix A

Informed Consent to Participate in Human Subjects Research

Anna Uecker (a graduate student at the University of Wisconsin-Stevens Point) and Dr. Rachel Brashier (Director of Music Education at the University of Wisconsin-Stevens Point), would appreciate your participation in a research study designed to explore how strings teachers build and foster relationships with their beginner students in a fully virtual teaching environment. You are being asked to complete a short survey that will take approximately 15-20 minutes. You will also participate in a 30-45 minute interview with Anna Uecker using a digital platform of your choice. This interview will be recorded. Your participation is completely voluntary. The benefit of this study is greater understanding of how relationships are built and fostered between strings teachers and students in a virtual format.

We anticipate no risk to you as a result of your participation in this study other than the inconvenience of the time to complete the survey and interview. Your confidentiality will be protected. Results will be reported using pseudonyms and your identity will be known only to the researchers.

While there may be no immediate benefit to you as a result of your participation in this study, it is hoped that the field of strings teaching will be enhanced by the knowledge gained as a result of this study, especially as it pertains to the newer experience of virtual instruction for beginner strings students.

Your survey responses, interview recordings, and interview transcriptions will be stored on a flash drive in a locked area of Anna Uecker’s office and will not be available to anyone not directly involved in this study. Pseudonyms will be used in analysis and publication of this study, and we will not release information that could identify you.

Your participation in this study is completely voluntary. If you want to withdraw from the study, at any time, you may do so without penalty or loss of benefit. Data provided up to that point from either the survey or interview would be deleted and destroyed.

The number of study participants is 6.

Once the study is completed, you may receive the results of the study. If you would like these results, or if you have any questions in the meantime, please contact:

Anna Uecker or Dr. Rachel Brashier  
Department of Music  
University of Wisconsin – Stevens Point  
Stevens Point, WI 54481  
(715)-346-2227  
aueck084@uwsp.edu; rbrashie@uwsp.edu

If you have any complaints about your treatment as a participant in this study or believe that you have been harmed in some way by your participation, please call or write:
Although Dr. Barry will ask your name, all complaints are kept in confidence.

“I have read and understand the information provided to me; that my participation is voluntary, and I may withdraw at any time.”

Additional Questions:

1. What is the best email address to contact you? This email will be used to send the electronic survey and to set up the interview.

2. What digital platform do you (or your child) prefer to use for the interview portion of the research (i.e. Zoom, Microsoft Teams, Google Meets, etc.)?
Appendix B

Minor Assent to Participate in Research

Title of Research Study: Pedagogical Approaches in the Virtual Beginning Orchestra Classroom

Principal Investigator: Dr. Rachel Brashier and Anna Uecker

Why am I being asked to take part in this research study?
A research study is usually done to find a better way to treat people or to understand how things work. You are being asked to take part in this research study because you just started learning how to play a string instrument this year, and you have been doing lessons virtually instead of in-person.

What should I know about a research study?
You do not have to be in this study if you do not want to do so. It is up to you if you want to participate. You can choose not to take part now and change your mind later if you want. Your decision will not be held against you. You can ask all the questions you want before you decide.

Why is this research being done?
In this study, I want to find out more about how orchestra teachers and their students build good relationships with each other when they only do their lesson virtually instead of in-person.

How long will the research last?
I expect that you will be in this research study for two short sessions: one interview that will last about 30-45 minutes, and about 15 minutes to answer some questions on a survey.

What happens if I say “Yes, I want to be in this research”? If it is okay with you and you agree to join this study, you will be asked to fill out a survey about your experience in orchestra this year. Then I will ask you to answer some questions in an interview. This interview will be recorded so I can go back and listen to it again.

Is there any way being in this study could be bad for me?
There is nothing bad that will happen to you as a result of being in this study. If you feel uncomfortable with any of the questions that I will ask, you can skip answering that question.

What happens to the information collected for the research?
Efforts will be made to limit the use of your personal information, including research study records, to people who have a need to review this information. We cannot promise complete secrecy. I will not use your name when I write about this study.

What else do I need to know?
If you agree to take part in this research study, it will help orchestra teachers to become even better teachers, especially when they have virtual lessons with their students.
Who can I talk to?
If you have questions, concerns, or complaints, about the research, talk to the research team at aueck084@uwsp.edu, or rbrashie@uwsp.edu. This research has been reviewed and approved by an Institutional Review Board ("IRB"). You may talk to them at (715) 346-3799 or irb@uwsp.edu if: your questions or concerns are not being answered by the research team; you want to talk to someone besides the research team; or you have questions about your rights as a research participant.

Optional Elements:
The following research activities are optional, meaning that you do not have to agree to them in order to participate in the research study. Please indicate your willingness to participate in these optional activities by placing your initials next to each activity.

I agree       I disagree

The researcher may audio or video record me to aid with data analysis. The researcher will not share these recordings with anyone outside of the immediate study team.

Signature Block for Child Assent

________________________________________________________      __________________
Signature of child                     Date

________________________________________________________
Printed name of child

________________________________________________________
Printed name of person obtaining assent (parent/guardian)     Date

________________________________________________________
Signature of person obtaining assent (parent/guardian)
Appendix C

Microsoft Forms Surveys

Virtual Lessons - Teacher Survey

1. Describe the format of instruction for your fully virtual beginner students. Do you have one-on-one lessons (synchronous)? If so, how often and how long? Do you have other digital resources that students use outside the lesson (asynchronous)? Please describe any contact or interaction you regularly have with your virtual students.

Enter your answer

2. Do you believe that establishing relationships with your beginner string students is an important part learning, motivation, and retention in your program?

- [ ] Yes
- [ ] No

3. What processes/activities do you do in an in-person environment to foster relationships with your beginning string students?

Enter your answer

4. Do you believe that teaching in a fully virtual format has changed the way you build relationships with your students?

- [ ] Yes
- [ ] No

5. What are some of the processes/activities you have done in a virtual setting to build relationships with your students? These could be verbal or non-verbal, synchronous or asynchronous.

Enter your answer

[Submit]
Virtual Lessons - Student Survey

1. Do you like doing school virtually so far?
   - Yes
   - No
   - Sometimes

2. Tell me what you like about virtual school.
   Enter your answer

3. Tell me what you don’t like about virtual school.
   Enter your answer

4. Is there anything you miss about going to school every day?
   Enter your answer

5. Do you feel like you’ve gotten to know your teachers this year the same way you normally would?
   - Yes
   - No

6. Why or why not?
   Enter your answer
7. What instrument do you play?
   - Violin
   - Viola
   - Cello
   - Bass

8. How long have you been playing this instrument?
   Enter your answer

9. How often do you see your orchestra teacher for lessons?
   Enter your answer

10. What has your orchestra teacher done in lessons to get to know you?
    Enter your answer

11. Has your orchestra teacher done anything else to get to know you better? If so, tell me about it.
    Enter your answer

Submit
Appendix D

Interview Questions

The following questions were used to start discussion during participant interviews. As the conversations unfolded, however, additional follow-up questions were asked in order to follow the contour of the conversation.

Teacher Interview Questions

- What are some of the challenges you have noticed with teaching virtual lessons?
- How do you build relationships with your students in an in-person setting?
- What do you do in a virtual lesson to get to know your student and build a trusting relationship?
  - Is there anything you do outside of the lesson (asynchronous)?
- Tell me about (student’s name).
  - What do they enjoy in school/outside of school?
  - How do they learn best?
  - What makes for a successful lesson with this student? What motivates them?
  - How did you make these discoveries about this student?
- What evidence have you seen so far that shows you have been successful in building a good relationship with your virtual student?
- Do you feel like you know your virtual student well and that they trust you?
- Is there anything you’ve learned about building relationships with your students in a fully virtual format that you will use going forward in in-person formats?
- If you had to choose one relationship building strategy to use with your students, what would it be?

Student Interview Questions

- Why did you decide to join orchestra? Why did you choose your particular instrument?
- What has been your favorite part about joining orchestra so far?
- What has been the most challenging part of being in orchestra, or learning your instrument, so far?
- Tell me about (teacher’s name).
- In your survey responses you told me that your teacher did this activity (fill in blank) to get to know you. Can you tell me more about that?
- What are some things that you and (teacher’s name) did to get to know each other?
- Do you feel like (teacher’s name) knows you well? Do you enjoy having lessons with her?
- Is there anything that you wish your orchestra knew about you to help you learn better?
- Tell me about a typical lesson. What is the very first thing you do in your lesson?
- What are some of your favorite activities or things you’ve done in your virtual lessons?