10-19-2015

Foundational Learning and Rehabilitation: An Investigation of the Remedial Strategies of Postsecondary Violin Instructors

Vanessa Andrea Mio
University of Windsor

Foundational Learning and Rehabilitation: An Investigation of the Remedial Strategies of Postsecondary Violin Instructors

by

Vanessa Mio

A Dissertation
Submitted to the Faculty of Graduate Studies
through the Faculty of Education
in Partial Fulfillment of the Requirements for
the Degree of Doctor of Philosophy
at the University of Windsor

Windsor, Ontario, Canada

2015

Foundational Learning and Rehabilitation: An Investigation of the Remedial Strategies of Postsecondary Violin Instructors

by

Vanessa Mio

APPROVED BY:

_____

Dr. Gail Barnes
Faculty of Music, University of South Carolina

_____

Dr. Deborah Kane
Faculty of Nursing, University of Windsor

_____

Dr. Rodger Beatty
Faculty of Education, Brock University

_____

Dr. Terry Sefton
Faculty of Education, University of Windsor

_____

Dr. Jonathan G. Bayley, Advisor
Faculty of Education, University of Windsor

[September 15, 2015]

DECLARATION OF ORIGINALITY

I hereby certify that I am the sole author of this thesis and that no part of this thesis has been published or submitted for publication.

I certify that, to the best of my knowledge, my thesis does not infringe upon anyone's copyright nor violate any proprietary rights and that any ideas, techniques, quotations, or any other material from the work of other people included in my thesis, published or otherwise, are fully acknowledged in accordance with the standard referencing practices. Furthermore, to the extent that I have included copyrighted material that surpasses the bounds of fair dealing within the meaning of the Canada Copyright Act, I certify that I have obtained a written permission from the copyright owner(s) to include such material(s) in my thesis and have included copies of such copyright clearances to my appendix.

I declare that this is a true copy of my thesis, including any final revisions, as approved by my thesis committee and the Graduate Studies office, and that this thesis has not been submitted for a higher degree to any other University or Institution.

ABSTRACT

Applied violin instructors at the postsecondary level often face the task of having to implement rehabilitation (remedial/corrective pedagogy) with incoming first-year students in order to address technical/musical habits or deficiencies. (Burt & Mills, 2006; Rolland, 1974b; Zweig, 2008). If students are not guided appropriately in the critical early stages, they increase their potential of developing poor technical habits or deficiencies that could be carried with them into their future studies (Hallam, 2013; Howe & Sloboda, 1991b; Kempter, 2003; Mills & Smith, 2003; Nerland, 2007). As various motor patterns are formed through habitual reinforcement, incorrect techniques may be strengthened (Salzberg & Salzberg, 1981).

Using a descriptive qualitative methodology with elements of multiple case study research design, 10 postsecondary violin instructors from across North America were interviewed to gain insight into personal rehabilitative approaches, influences, experiences, and assessment strategies that they implement with their first-year performance students. The interview data, external data sources, and artifacts were then analyzed through the theoretical framework of empiricism, Social Development Theory, Scaffolding Theory, Attribution Theory, and Teacher Attribution Scaffolding Theory.

The results indicated that most first-year violin performance students require remedial work, with posture and the bow arm representing the most pressing deficiencies. The participants had differing opinions in terms of how deficiencies are established, but they agreed that appropriate early instruction is imperative. Many participants believe that through experience, they now address correction based on the individual psychological wellbeing of every student, their level of self-efficacy, resistance to

change, and postsecondary pressures. By contrast, other participants view rehabilitation as a necessary part of postsecondary education, regardless of artistic proficiency.

The participants agreed that although some first-year students resist correction, the majority of students exhibit an increased sense of self-efficacy through a positive feedback loop of practice, motivation, feedback from their instructors and peers, and tangible documentation of improvement. The pedagogical expertise and applied experiences presented in this study should inform current and future violin pedagogues about the effects of inappropriate early instruction, how to assess the need for rehabilitation, and how to address technical/musical deficiencies effectively.

DEDICATION

I dedicate this dissertation to Dr. Metro Kozak.

Thank you for your loving support and guidance over the years.

You continue to inspire me.

ACKNOWLEDGEMENTS

Firstly, I would like to thank God for the strength, favour, and amazing opportunities while completing this degree. You have given me exceeding, abundantly, above all that I could ever ask, dream, or think. (Ephesians 3:20)

I would like to thank my supervisor, Dr. Jonathan Bayley, for your patience, inspiration, wisdom, and guidance over the last five years. You had faith in my abilities as a musician and student, and you have opened my eyes to a new scholarly world. Thank you for leading me through my first research study and giving me the confidence to pursue new challenges and adventures in the field of music education.

Thank you to all of my dedicated committee members: Dr. Gail Barnes, Dr. Deborah Kane, Dr. Terry Sefton, and Dr. Rodger Beatty. A big thank you to Dr. Beatty for your knowledge, sincere interest, and time that you gave in guiding my academic and musical pursuits. I would also like to thank Dr. Darren Stanley and Gayle Tait for your patience and support over the years. You believed in me, and I am so grateful!

This study has inspired me in many ways: personally, academically, and violinistically. I would like to thank all of the participants for your time and effort in preparing for the interviews and contributing to the study. Many spoke for longer than the allotted time frame and were more than willing to share personal experiences to bring awareness to the issue of rehabilitation. Through your wisdom, I gained a greater awareness about my own teaching practices and how to best approach remedial pedagogy with my students. I share many of your personal stories, anecdotes, and pedagogical strategies with my students on a regular basis, as a means to continue your legacies.

Thank you to Mimi Zweig and Dr. Brenda Brenner for the major part that you played in my life over the last decade. You are incredible mentors and supporters, and your guidance over the years has impacted my life in many ways. Thank you for instilling in me a passion for teaching and teacher education.

Lastly, I would like to thank my amazing family. Mom, Dad, Nathan, and Kiersten, you have always supported my dreams and aspirations in life, and I am so grateful for your patience, encouragement, and understanding throughout this journey.

TABLE OF CONTENTS

CHAPTER I

INTRODUCTION

Problem Statement

Violin pedagogues develop subjective approaches with regards to how to teach the instrument, based on acquired knowledge, experiences, and opinions (Hesterman, 2012; Mills, 2002; Mills & Smith, 2003; Nerland, 2007). Applied[1] violin instructors at the postsecondary[2] level have the responsibility to assess the pedagogical standards and perspectives of their first-year students' previous instructors and the results of their students' prior education. This task is often challenging for postsecondary instructors because many high school seniors entering undergraduate violin performance[3] programs lack basic foundational technique (Bernstein, 2001; Burland & Pitts, 2007).

One's capabilities for musical expression are increased with the acquisition of technical prowess, but technique does not guarantee musicality. Both technique and musicality are continuously affected by each other, as the acquisition of appropriate technical skills could potentially lead to more meaningfully artistic expression (Rink, 2004). Fischer (1997) states the following regarding technique in instrumental playing:

> The most important thing is to have so much technique that you don't have to think about it. If you are too conscious of the "how," it can make playing almost impossible, just as any actions that normally happen automatically–walking, talking, eating, etc.–become stilted and awkward when we try to perform them consciously. Children learn quickly because the "how" goes straight into the unconscious. It is through the adult knowing ever more clearly and consciously

> what we do, that finally technique becomes automatic and is then naturally forgotten. Then the player can really be free to make music. (p. vi)

When the technical foundation is established in the first lessons with young students, the freedom of artistry in later stages of development has the potential to seamlessly evolve. Galamian (1999) states that in the early stages of study, students "must become fully equipped with all of the technical tools so that [their] musical ideals may be fully realized" (p. 5).

Researchers have found evidence that many string instructors at the beginning levels attempt to emphasize the importance of correct early development, but may not necessarily know how to implement properly the appropriate pedagogical skills (Elliott, 1992; Fredrickson, 2007; Gibbs, 1993; Mills & Smith, 2003; Salzberg & Salzberg, 1981). As a result, motor patterns are formed, and because they are "repeated continuously while playing the instrument, incorrect ones may be strengthened rapidly and become habitual" (Salzberg & Salzberg, 1981, p. 125). Students who are not guided appropriately by their instructors in the early stages of learning may develop poor technical habits and become restricted in their artistic expression in the future (Hargreaves, Marshall, & North, 2003; Wiggins, 2007). If, for instance, the preparation of the bow arm is overlooked, this could potentially result in underdeveloped bowing technique and poor tone production.

When applying for performance studies at a postsecondary institution, undergraduate violin students must demonstrate a certain standard of technique and musical potential. As students progress through their undergraduate programs, many encounter increased technical and musical expectations, and "realize too late that their basic weaknesses can hardly be rectified amidst the demands of academia" (Bernstein,

2001, p. 47). The combined challenges of academic and applied requirements often lead to performance anxiety and feelings of inadequacy (Burland & Pitts, 2007; Burt & Mills, 2006; Lowe & Cook, 2003; K. Smith, 2002). Bernstein (2001) states that postsecondary faculty members are often shocked at the lack of poor training exhibited by incoming first-year students, and that "the majority of teachers in colleges and music conservatories are neither interested nor prepared to teach the basics of technique, musicality, and memorizing" (p. 46) at a postsecondary level. Many students face the challenge of having to correct an improper bow hold, correct postural alignment, or address tension issues while adjusting to postsecondary academic/social demands and trying to meet performance deadlines (K. Smith, 2002). Although first-year performance students exhibit a level of applied skills and knowledge that are sufficient to win entrance to a music program, many begin their postsecondary education with considerable technical/musical deficiencies.

Research Purpose

Many violin pedagogues in postsecondary institutions address the individualized needs of their students in a holistic manner through remedial pedagogy, or "rehabilitation" (Zweig, 2008). Effective violin pedagogues have the ability to evaluate the various skills and technical weaknesses of their students, and implement assessment strategies that are tailored for each individual (Cheng & Durrant, 2007). The implementation of corrective pedagogy "develops problem-solving skills, enhances independence, stimulates motivation and provides positive learning experiences" for students who have technical "gaps" resulting from their inadequate prior studies (Burt & Mills, 2006, p. 63). Rolland (1974b) states the following with regards to remedial work:

> Both developmental and remedial learning depends on the establishment of new motor responses. But while in the first case, new habits are built on yet undisturbed ground, in the case of remedial learning, faulty actions must first be identified, sensed, then replaced with a new action. Herein lies the difficulty of changing faulty motion patterns, whether in bowing or left hand techniques: ingrained motor responses subconsciously come into action. The player has little control over these conditioned responses. (p. 179)

Ingrained habits are often difficult to reverse (Salzberg & Salzberg, 1981). Through the implementation of remedial pedagogy, students gain an understanding of the fundamental technical/musical skills in violin playing, with artistic freedom as the ultimate goal.

Mimi Zweig, Violin/Viola Professor at Indiana University Jacobs School of Music and Director of the Indiana University String Academy, noted the effects of inadequate teaching in both the string community of young preuniversity[4] students and incoming first-year postsecondary students. This issue inspired her to devise her own process of corrective pedagogy to implement with students who have had prior instruction. Rehabilitation, according to Zweig (2008), is an intensive progression of specific methodology to correct mannerisms and poor habits, and serves as a means to relearn the fundamental aspects of violin playing.

The motivation for pursuing this research arises from my experience as a violin student. Over a period of seven years, when I was both Zweig's student and teaching assistant, she rehabilitated my violin technique, and also provided me with the opportunity to work through the progression of rehabilitation with students ranging from young children to postsecondary adults. This transformative experience sparked my

interest in pedagogy and has shaped my pedagogical philosophy. Having experienced the process of rehabilitation, I now advocate foundational learning, or correct early development, in violin pedagogy.

Violin instructors are influenced by their prior teachers and their own lived experiences. These experiences and perceptions shape their subjective approaches towards instruction, learning, and correction (Purcell, 2005). Although researchers have assessed the diagnostics of technical hindrances, corrective feedback, and the need for diverse pedagogical approaches (Gillespie, 1991; Mills & Smith, 2003), the specific remedial pedagogical strategies that postsecondary violin instructors implement with their first-year students seems not to have been addressed. Therefore, the purpose of this study is to fill the apparent gap in the literature with an investigation of how postsecondary instructors implement remedial practices with their first-year performance students in an applied context. In addition, I explored various perspectives on the need for rehabilitation, and how pedagogical influences and teaching backgrounds affect corrective methodologies. Through this study, the participants had the opportunity to share their insights and lived experiences regarding remedial pedagogy with current and future pedagogues.

Research Questions

1. What aspects of playing in first-year violin performance students require rehabilitation?
2. What do postsecondary violin instructors perceive are the reasons why rehabilitation is often required in first-year performance students?

3. What strategies, (e.g., pedagogical, physiological, and psychological) do postsecondary violin instructors use in order to rehabilitate first-year performance students?
4. How do postsecondary violin instructors implement rehabilitative practices with their first-year performance students?

Researcher Positionality

My interests in violin pedagogy and rehabilitation all stem from the opportunities and privileges that I received as a child. I grew up in a household with supportive parents who sought to nurture any interests that I had. Since I was the first person to seriously study music in my family, they provided every opportunity possible to further my musical abilities. In my initial violin lessons, the focus was on my love for the instrument and my ability to perform musically without a strong focus on my technical foundation. When I began my postsecondary studies at Indiana University, I had acquired adequate skill sets to be admitted into the program, although there were obvious deficiencies in my playing. The technical/musical standard and the level of musicianship were superior to what I had previously experienced. I was surrounded by world-renowned artists and educators, and consequently, I felt inspired.

In my first lesson with Zweig, she reevaluated my physical setup, left hand technique, bow arm, and posture and began the remedial process right away. This was a difficult time in my education because my self-efficacy and beliefs that I had regarding my abilities as a musician were being challenged. Throughout the first year of my undergraduate studies, Zweig continuously assessed my technical deficiencies and utilized various scaffolding strategies to help me relearn the basic martelé bow stroke, proper shifting technique, tension-free bow hold, and correct execution of vibrato. As

Salzberg and Salzberg (1981) state, physical actions that are strengthened through habitual practice are difficult to change, and I experienced this physiological resistance every day as I worked against what felt natural. Through daily rigorous practice, I systematically reconstructed the technical and procedural knowledge that I had as a violinist through repertoire that was both technically and musically accessible.

As a result of Zweig's expertise and patience in working through the process of rehabilitation, I have been transformed as an artist and now as a teacher. The fundamental pedagogical knowledge that Zweig acquired from the methodology of Suzuki (1983) pertaining to sequential skill acquisition, in addition to Rolland's (1974b) physiological approach to violin instruction, and Galamian's (1999) focus on metacognition, have become a part of my own playing and teaching. I now have the knowledge and experience to successfully teach beginner students using a variety of pedagogical methodologies, in addition to the process of rehabilitation with students at any level of proficiency. I currently teach one-on-one lessons at the Wilfrid Laurier String Academy in Waterloo, Ontario and direct a variety of group violin classes on a weekly basis, with students ranging in age from young children to postsecondary adults. At Wilfrid Laurier University, I teach applied violin lessons and a violin pedagogy course. My prior education and personal experiences with regards to rehabilitative pedagogy have culminated into this research study.

Significance of the Study

I have found no research that has been conducted to examine the remedial practices implemented by violin instructors at the postsecondary level. Through this study, I hope to share meaningful pedagogical expertise and eventually build upon the

scope of the research. The reconstruction of prior knowledge and foundational violin technique/musicality through rehabilitation are fundamentally linked to both theory and practice.

Organization of the Study

I have organized the study through a descriptive qualitative methodology with elements of multiple case study (Chenail, 2011; Stake, 2005), involving 10 postsecondary violin instructors from across North America. In Chapter I, I outline the problem statement, research purpose, research questions, and researcher positionality. Throughout the theoretical framework and review of the literature in Chapter II, I present the main concepts of empiricism, Social Development Theory, Scaffolding Theory, Attribution Theory, Teacher Attribution Scaffolding Theory, and the pedagogical methodologies of Shinichi Suzuki, Paul Rolland, Ivan Galamian, and Mimi Zweig. I conclude the chapter with a discussion of rehabilitation through the extant literature.

In Chapter III, I outline the methodology and research design in detail, explaining the participant criteria and recruitment, data collection, data storage, data analysis, use of multiple data sources, and descriptive narrative format of the study. Validity, biases, and ethical considerations conclude the chapter and lead into the results of Chapter IV. In this portion of the study, I present the interview data and multiple data sources in terms of themes and codes that emerged throughout the analysis. I then examine the research questions through the broad categories of demographic backgrounds, pedagogical influences, pedagogical lineage, technical aspects requiring rehabilitation, reasons why rehabilitation is required, pedagogical/physiological/psychological strategies in rehabilitation, and how postsecondary violin instructors implement remedial practices. In

Chapter V, I present the discussion and implications from the results section, and expand upon many of the broad categories formed through the research questions. Following the limitations of the study, implications for future research, and conclusion, I include tables and appendices to outline in detail the demographic background and lineage of the participants, recruitment protocol, email correspondence with the participants, and consent forms.

In the literature review, which follows in the succeeding chapter, I outline the theoretical framework of empiricism, Social Development Theory, Scaffolding Theory, Attribution Theory, and Teacher Attribution Scaffolding Theory, and the violin pedagogical methodologies of Suzuki, Rolland, Galamian, and Zweig. The extant literature provides both the theoretical and practical implications of sequential development and rehabilitation as it applies to violin pedagogy.

CHAPTER II

REVIEW OF THE LITERATURE

According to Marshall and Rossman (1995), the theoretical frame "provides the conceptual grounding of the study. It is built upon a combination of tacit (experience-based) theory and formal (literature-based) theory and serves to inform researcher's assumptions and guide his or her questions about the research setting" (p. 24). I begin the literature review by outlining the theoretical frame of empiricism, Social Development Theory, Scaffolding Theory, Attribution Theory, and Teacher Attribution Scaffolding Theory. I then bridge the gap between theory and practice through an examination of the violin pedagogical methodologies of Suzuki, Rolland, and Galamian, all of which encourage foundational learning, scaffolding, and metacognition from the outset of instruction. I then outline the pedagogical philosophy of Zweig, who has a reputation for her remedial pedagogy, before discussing the current research involving rehabilitation.

Theoretical Framework

Empiricism

The theoretical frame of empiricism encapsulates the notion that all beliefs, concepts, perceptions, or propositions that can be justified, originate in observation and experience (Blaikie, 2007; James, 1976; Quinton & Quinton, 2015; Sellars, 1956). According to Lincoln, Lynham, & Guba (2011), "We are shaped by our lived experiences, and these will always come out in the knowledge we generate" (p. 104). Elliott (2002) states that empiricists focus on individual, sensory experiences of the external world, on "empirically verifiable facts or on statements that are true by definition–on things as they are (as opposed to things as they appear)" (p. 90). Through

observation and sensory experience, empiricists examine how new knowledge can be acquired from prior knowledge in order to develop a better understanding of a field of study (Guba & Lincoln, 2005; Merriam, 1991). According to Deleuze (1991), "Difference alone does not make an empiricist philosophy: difference *and* repetition are required to relate to each other chiastically" (p. 8). In violin instruction, empiricism is present in the sensory perception of various symbol systems, and through the acquisition of technical and performance practice knowledge that is passed on through the generations (Higgins, 2006; McDermott & Hauser, 2005; Stevens & Byron, 2009).

Empiricism in Music Education: Studio Instruction

In relation to studio music instruction, violin instructors have diverse pedagogical views based on life experiences and education. Throughout history, pedagogical strategies and performance practices that have proven to be effective have sustained and impacted the field. According to Reimer (1989), a musician who understands "the concept of 'Beethoven-ness' is able to (1) notice the common features of the sounds of Beethoven's music; (2) give the proper name to that noticing; and (3) do so regularly whenever a piece of Beethoven is played" (p. 83). When interpreting the intentions of composers, both performers and teachers strive to decode accurately the existing symbol systems and historical implications of performance practices (Higgins, 2006). As a result, "music instruction remains very traditional, and its rationale has changed little since the early part of the nineteenth century" (E. Jorgensen, 2003, p. 3).

Flesch (1939) refers to the "rules" of violin playing, stating that "a complete technique would mean the ability to produce all musical notes cleanly, with beautiful tone quality, with required dynamic, and in the correct rhythm. Any technical shortcoming

will, without exception, be an infringement of this fundamental rule" (p. 1). E. Jorgensen (1997) further explains this concept:

> In music, training refers specifically to how one gradually masters many things involved in music making. . . . Skills are governed by the procedural rules that specify how certain things are to be done and when they are said to be mastered. (pp. 8-9)

In the early stages of learning, a student may not fully understand the ways in which skills are cognitively acquired (E. Jorgensen, 1997). As the "student progresses in training, however, he or she moves toward a deeper understanding of the rules and their interpretation within particular musical contexts. . . . Students build on blind mastery, moving to self-conscious adherence of the rules" (E. Jorgensen, 1997, p. 9). She adds, "Training is accomplished through practice. Whereas drill implies the simple mechanistic repetition of tasks allied to conditioning, practice involves the application of critical thinking and imagination as one gradually moves toward the mastery of music-making skills" (E. Jorgensen, 1997, p. 10). According to E. Jorgensen (1997), as students acquire technical/musical skills, they are able to express themselves artistically, and gain experiential knowledge as learners within the social context of the lesson format.

All musical instruction can be reduced to the simplest structure of teacher and student (Kennell, 2002). Violin instructors may be self-employed musicians or orchestral performers who have established studios in a conservatory setting. Others may teach from their homes and establish a studio based on their personal musical experiences or training. All instructors may or may not have previously attained music degrees from postsecondary institutions or conservatory diplomas (Folkestad, 2006). Studio music

instruction, according to Kennell (2002), is a "deceptively simple term that represents an extremely complicated professional practice. . . . The testimony of expert teachers, also known as 'methods,' lies in epistemological contrast with positivistic investigative tools that search for global truths" (p. 244). In the music studio, the primary concern of instructors is to formulate a personalized approach to the instrument through communication and modeling in order to connect with every student, where "biography, personal opinion, and successful experience [relate] prescriptively" (Gipson, 1978, p. 30). Campbell (1991) describes the art of Western studio instruction, stating that teachers are transmitters of their own personal musical heritage, as they "shape the musicianship of their students, demonstrating through their own performance the standards of tone quality and technique" (p. 276). Instructors convey their musical heritage through past experiences, the priorities of previous teachers, and their subjective teaching/learning models of instruction (Kennell, 2002).

In the initial stages of instruction, the atmosphere should be predominated by teachers who strive to make lessons enjoyable, and are eager to provide extrinsic rewards to maintain interest (Hallam, 1998; Hidi, 2000)**.** At this early stage of development, parental involvement and the establishment of a correct technical/musical foundation are crucial factors in predicting the potential success in future studies (Brenner, 2010a; Creech, 2001). If the foundational structure is weak, as a result of insufficient guidance from the instructor, the progression of the student is hindered and may result in the need for corrective pedagogy in the future (Manturzewska, 1990; Sosniak, 1990; Zweig, 2008). Although the technical/musical foundation is a priority in this critical stage of

study, instructors approach the development of individual students in diverse ways (Elliott, 2001).

Teaching is a process of self-discovery and experimentation (Kennell, 2002). In music instruction, this concept is evident in the assessment strategies, modeling, verbal guides, and approaches that violin instructors vary for every student on a weekly basis (Rosenthal, 1984). Kennell (2002) explains, "The professional practice of studio teachers includes many examples of decision-making. These include: what to assign, what to attend to, how to promote change, when to advance, and when to repeat" (p. 250). The role of the instructor is "to actively solve the problems of the students through interaction, and the cognitive processes of teachers are reconstructed or inferred from the observable outcomes. The teacher temporarily supports the student like a scaffold" (Kennell, 2002, p. 245). As students progress, the instructor becomes less involved in the process and encourages further metacognition and independence (Hallam, 2001; Kennell, 1997).

When a foundation is established and students progress through various stages of technical/musical development, instructors can then shift their focus to artistic musicianship and creative interpretations. Along with the influences of tradition, instructors interpret the musical conventions of performance practice through "the formation of conceptual interpretations, retrieval from memory of musical structures . . . transformation into appropriate motor actions . . . internal timing mechanisms . . . [and] perceptual consequences" (Palmer, 1997, p. 115). Such elements serve as the basic framework for musicians as they recreate and expand upon their personal musical

interpretations. Although historical contexts are important, Elliott (2002) states the following with regards to the subjective nature of interpretations:

> The social world is inherently "mental" in the sense that social reality pivots on the ways people interpret and act in their worlds in relation to their tacit beliefs and interpretations. From this perspective, human believing, interpreting, thinking, and acting are often unpredictable, because human consciousness is always involved in continuous, integrated processes of attention, cognition, emotion, intention, and memory. Thus, it is difficult, if not impossible, to posit causal laws to explain human behaviors. (p. 92)

The traditions of performance practices are in every music studio, but one cannot view music and/or teaching and learning in an objective way as perspectives often evolve through experience and experimentation (Elliott, 2002; Walls, 2002). According to Hudson and Ozanne (1988), "Interpretations are always incomplete. One never achieves the understanding; one achieves an understanding" (p. 510). Subjective musical interpretations highlight the diverse, artistic freedom that all musicians are privileged to discover, develop, and present to an audience.

Studio instructors in both the conservatory or home setting may have different goals, priorities, and pedagogical models compared to postsecondary instructors. When students reach postsecondary education, a new phase of studio instruction begins. This phase of development is characterized by a master-apprentice relationship, where "pupils begin to develop autonomous learning strategies. . . . The master exerts considerable power, critiquing students' performances and also initiating them into the world of musical values, introducing them into professional circles and facilitating their transition

into professional musicians" (Creech & Hallam, 2010, p. 404). When students experience positive master-apprentice relationships, they are continually challenged through assessment and feedback, aware of their strengths and weaknesses, and nurtured in an environment that prepares them for a career outside of the postsecondary walls (Cullingford, 2006; Gaunt, 2008; Hays, 2012; McWilliam & Dawson, 2008; Portner, 2005).

Through the established trust and safety within the studio, instructors then have the freedom to address issues in a nonjudgmental manner (Zweig, 2008). Many students have to undergo varied levels of remedial work at the outset of their postsecondary studies in order to address prior mis-education or acquire a new perspective on certain skills. This stage of development fosters diverse discourse and practice, allowing for a multitude of pedagogical approaches and perspectives (Hays, 2012). Although instructors may present successful remedial strategies and methodologies, students have the freedom to accept a certain practice or not, depending on their perception of self-efficacy and level of motivation in accepting correction (Dennett, 1985).

In addition to elements of empiricism, the acquisition of skills in violin pedagogy are fundamentally linked to Vygotsky's Social Development Theory and Scaffolding Theory. Rehabilitation, the emotional experiences involved in the reconstruction of knowledge and skills, and the various pedagogical approaches to correction are linked to Attribution Theory and Teacher Attribution Scaffolding Theory.

Social Development Theory

According to Vygotsky's (1978) Social Development Theory, learning does not occur in isolation, but instead through reciprocal experiences of collaboration (Charmaz,

2006; Hausfather, 1996; K. Powell, 2006). This theory challenges traditional methods of teaching, and instead "considers learning as a shared-joint process in a responsive social context" (Gindis, 1999, p. 334). Reciprocal learning "happens when both the [student] and teacher together are colearners. . . . The [student] and the teacher guide each other and learn from one another" (Biddle, 2010, p. 18). Educators have the responsibility to pique the students' interest, use effective communication, observe discrepancies in the students' efforts, and model the ideal behaviour of tasks, while continually evaluating the students' responses (Bruner, 1966, 1985; Crawford, 1996; Wertsch & Sohmer, 1995). In violin lessons, instructors use imitation, demonstration, modeling, and efficient communication in order to set manageable weekly goals and encourage critical examination of effort. According to Wiggins (2007), "Learning is something individuals do, most often with the help of others" (p. 36). Through this reciprocal learning process, individuals "construct meaning and knowledge together in community" (Lambert, 2002, p. xvii).

Learning is affected by modeling, imitation, and language acquisition (K. Powell, 2006). Vygotsky (1987) states that "imitation is the source of instruction's influence on development. . . . Instruction is possible only where there is potential for imitation" (pp. 210-211). Students do not merely copy the teacher's modeled behaviour, but they also interpret various actions, concepts, and language in relation to what they already know (Green & Gredler, 2002; Kovalainen & Kumpulainen, 2007; S. Scott, 2011). In violin lessons, students have to carefully observe the ways in which the instructor physically manipulates the bow, the fingers of the left hand to execute a passage or shift, or postural alignment, and then interpret this information taking into consideration their own

physiology. In terms of learning through imitation, Vygotsky (1978) claims, "Children can imitate a variety of actions that go well beyond the limits of their own capacities. Using imitation, children are capable of doing much more in collective activity or under the guidance of adults" (p. 88). Imitation is not a mechanical process, but serves as a stepping-stone from understanding a concept to understanding something new. This collective activity and process is referred to as the zone of proximal development (Vygotsky, 1978, 1984).

Through collaborative learning experiences, Vygotsky (1978) believes that cognitive development occurs through imitation, and then within the zone of proximal development, where scaffolding allows for sequential acquisition of knowledge, skills, and higher mental functions (Fernyhough, 1996, 2004; Vygotsky, 1978, 1994, 1997). Vygotsky's zone of proximal development is understood as "the difference between what a child can accomplish independently and what he or she can achieve in conjunction with another, more competent person" (Tudge & Winterhoff, 1993, p. 67). Vygotsky (1987) states, "Instruction is only useful when it moves ahead of development. When it does, it impels or wakens a whole series of functions that are in a stage of maturation lying in the zone of proximal development" (p. 212). In violin instruction, technical skills are often introduced to students before they are developmentally ready to execute them, so that through efficient practice, they acquire greater comprehension, understanding, and eventual mastery of tasks. Violin instructors must be sensitive in knowing how far to developmentally challenge their individual students before they reach negative feelings of incompetence, frustration, and defeat (Galamian, 1999; Kennell, 2002; B. Smith, 2005).

In addition to the zone of proximal development, internalization and mediation explain how the gradual and progressive internalization of a child's understanding of others is rooted in social interaction (Astington, 2004; Carpendale & Lewis, 2004, 2006; Chesnokova, 2004; Fernyhough, 2008; Woolfolk, 2004). The rate of knowledge internalization is dependent on the personal experiences and interactions that children have with their instructors and peers in their immediate environment (Bruner, 1961; Hausfather, 1996; Powell & Kalina, 2009; Tudge & Rogoff, 1999). Violin students have the challenging task of interpreting information from their instructors and transferring it kinesthetically in their own personal way. Instructors can ideally explain how something should feel, but they are unaware of the mental/physical processes involved in the subjective interpretation and internalization of knowledge. This highlights the importance of scaffolding in conjunction with reciprocal learning, as instructors monitor how their students acquire skills in a gradual, systematic manner. The detailed components of Social Development Theory are utilized on a regular basis in violin lessons. Students are encouraged to go beyond their developmental capabilities through interaction with an experienced instructor and develop technical/musical skills through scaffolding strategies (Kempter, 2003).

Scaffolding Theory

According to Wood, Bruner, and Ross (1976), "Scaffolding situations are those in which the learner gets assistance or support to perform a task beyond his or her own reach if pursued independently when 'unassisted'" (p. 90). In due time, "the learner has a grasp of the target skill, [and] the master reduces (or fades) his participation, providing only limited hints, refinements, and feedback to the learner, who practices successively

approximating smooth execution of the whole skill" (Collins, Brown, & Newman, 1989, p. 456). New knowledge is built on a foundation of previous knowledge and personal experiences, where every internal transformation leads to more advanced thinking (Berk & Winsler, 1995; Duffy & Jonassen, 1992; Gredler, 2009, 2012; Karpov, 2003; Palincsar, 1998; Powell & Kalina, 2009; Vygotsky, 1994, 1997; Wood & Middleton, 1975).

Scaffolding is an essential aspect of violin pedagogy because technical motor development stems from the foundation that is established in the first lessons (Zweig, 2008). If correct posture, left hand placement, bow position, and freedom from tension are encouraged, the student has the potential to gradually accumulate a variety of bow strokes and finger dexterity in a seamless manner (Zweig, 2008). Through scaffolding, Pea (2004) advocates a high degree of focus, modeling, and constraint to "increase the likelihood of the learner's effective action" (p. 432). In violin lessons, instructors also choose scaffolding strategies to promote efficient practicing through frequent repetitions (Rolland, 1974b; Suzuki, 1983). Some strategies could include: singing phrases or finger numbers, "shadowing" the bow over the string, practicing passages with rhythmic permutations, or practicing passages on open strings. The implementation of scaffolding strategies increases the students' potential for appropriate technical/musical development and the ability to think critically through metacognition (Galamian, 1999; Hallam, 2001; H. Jorgensen, 2000; Rolland, 1974b).

Social Development Theory and Scaffolding Theory in Music Education

Music education and informal musical play often begin in the home (De Vries, 2009; Gembris & Davidson, 2002; Kelley & Sutton-Smith, 1987; Soccio, 2013). Researchers have determined that one of the most critical environmental influences in

contributing to the success of a child is their parental support (Creech, 2001; Davidson, Howe, Moore, & Sloboda, 1996; Gembris & Davidson, 2002; Howe & Sloboda, 1991a; McPherson, 2009). From a young age, children learn at different rates depending on their life circumstances, parental involvement, and socioeconomic influences (Martinez, 2010), but "given an equal opportunity, every [child] can achieve maximum potential" (Gunn, Richburg, & Smilkstein, 2007, p. 83). De Vries (2005) believes that "parents are in a position to influence and provide opportunities to enhance young children's musical development. In doing this, music making in early childhood clearly can be a social process between parent and child" (p. 307), and informal musical play is vital to a child's socialization (Campbell, 2010; Cooper & Cardany, 2008).

In addition to informal musical play, Gordon (1987) believes that musical potential in young children is increased through the development of audiation. According to Gordon (1987), audiation "takes place when one hears music silently . . . when the sound is not physically present" (p. 13). When young children experience appropriate musical guidance from their parents and instructors, they acquire the beginning stages of audiation and establish a foundation for future musical development (Gordon, 1984). In music education, an ideal scenario involves a parent who provides encouragement and appropriate support in the early stages of learning until the child is able to exhibit self-regulation (Howe & Sloboda, 1991a).

In the early stages of violin study, instructors should physically model the motions (e.g., martelé bow stroke) for students to ensure that skills are being executed correctly and reinforced in lessons (Rolland, 1974b; Zweig, 2008). As the students' independence grows, instructors can then verbally communicate their technical/musical intentions in an

individualized manner, while students are encouraged to ask questions, provide feedback, and raise concerns throughout their lessons (Kennell, 2002). The learning process becomes reciprocal as students learn from their instructors, and instructors learn how their students respond to certain stimuli and information (Hays, 2013). Along with the responsibility of modeling and verbalizing appropriate technique, applied instructors have to perceive the developmental limitations and present intentions of their students at every lesson in order to gauge the weekly expectations (Adachi, 1994; Kemp, 1996).

In violin pedagogy, scaffolding involves the acquisition of skills through specific step-by-step instruction until students are developmentally ready to execute them on their own (Kempter, 2003; Rolland, 1974b; Suzuki, 1983). Through patience and appropriate guidance from the instructor, students break technical concepts down to the basics, sequentially build upon them through specific practice strategies, and eventually gain mastery and internalization of a specific skill (Kennell, 2002; Rolland, 1974b; Suzuki, 1983). Effective scaffolding techniques serve as a fundamental aspect in both the Suzuki (1983) and Rolland (1974b) violin pedagogical methodologies through the sequential acquisition of skills, and the establishment of a strong technical foundation from the outset of study. The Rolland (1974b) philosophy focuses primarily on physical setup and freedom from tension in the beginning stages, in addition to the gradual acquisition of skills through “action studies” (p. 43). Action studies are short, physically manageable tasks for young children to practice that indirectly develop their technique in a sequential fashion. The Suzuki (1983) philosophy encourages observation, imitation, and repetition at the outset of study. Students are required to observe and practice with a parent and imitate the teacher’s performance behaviour as a part of the weekly private lessons.

According to Gredler (2012), preschool children do not have the foundational psychological functions that are required to engage within the zone of proximal development until roughly 7 years of age, which negates the effectiveness of more independent approaches to pedagogy for young children. Therefore, students who begin studying the violin at age 4 or 5 should engage in more imitative practices with the instructor to maximize their learning potential (Gredler, 2012). At this age, technical skills are acquired through extensive modeling by the teacher (e.g., physically manipulating the right hand in the correct bow position, tapping fingers on the bow to encourage freedom from tension, executing bow strokes for students while they remain loose and feel the motions), in addition to direct imitation of small manageable tasks, and repetition of previously learned materials (Haston, 2007; Kupers, Van Dijk, & Van Geert, 2014; Suzuki, 1983). As students mature, they are given increasingly more developmental freedom in experimenting with newly acquired skills and practice strategies, in order to exceed their current level of competence (Galamian, 1999; McPherson, 1997).

In addition to the sequential accumulation of skills, scaffolding strategies encourage metacognitive awareness (Hallam, 2001; E. Jorgensen, 1997; Kempter, 2003; Kennell, 2002). Through metacognition, students are required to analyze their progress and solve their technical or musical challenges through personal strategies (Duke, 2012; Ferm, 2005; Hallam, 2001; Metcalfe & Shimamura, 1994; Mezirow, 1990; S. Scott, 2008). Chin and Brown (2000) believe that the ability to solve problems and absorb content is enhanced when students are required to ask meaningful questions and analyze their own work and progress. When specific scaffolding strategies are implemented, the distance

between a students' developmental level and a students' potential developmental level becomes smaller (H. Jorgensen, 2000; Kovalainen & Kumpulainen, 2007). According to Wiggins (2007), "Well-designed learning experiences, coupled with appropriate scaffolding (i.e., support) from peers and teachers, enable [students] to excel in music at levels we have not seen before" (p. 36). Although scaffolding techniques are essential in the Suzuki and Rolland pedagogical methodologies, Galamian (1999) advocates a more independent approach to pedagogy by viewing every student as a new and exciting challenge.

As students progress through the developmental stages of learning and/or rehabilitation through metacognition, they become "autonomous and self-propelled" (Reimer, 1997, p. 22). Students who mediate their own learning tend to problem solve, reflect on their progress, and participate enthusiastically, as opposed to those who rely solely on the instructor's feedback (Biggs, 1987; Chin & Brown, 2000). According to S. Scott (2011), students gain a respect for expert knowledge, where "expertise is not forced on them; rather it helps them to function independently as musically informed and capable individuals" (p. 197). If instructors fail "to create appropriate tasks, advance new demands, or stimulate the intellect through new goals" (Vygotsky, 1994, p. 214), students may become stagnant in their development and not advance to new artistic levels. Through the lens of Social Development Theory and Scaffolding Theory, reciprocal learning opportunities, scaffolding strategies, and metacognitive analysis can potentially affect the progress of students at any age or level of proficiency.

Mentorship in Postsecondary Music Instruction

In postsecondary studio music instruction, the term "mentor" is often used to describe the relationship between a teacher and student (Hays, 2013). Although this specific model of master/apprentice teaching focuses on the development of skills within a musical institution, powerful relationships similar to that of a parent and child often form and extend beyond the professional boundaries of the music studio. (Burwell, 2006; Kennell, 2002; Penner, 2001; Reid, 2001; Savage, Karp & Logue, 2004). Hays (2012) describes his views of mentorship:

> The term mentor is not necessarily synonymous with the term teacher . . . although some teachers can be mentors. Rather, mentorship is essentially about interpersonal relationships extending beyond the normal teacher/student interaction. It is about the gift and the legacy of the interaction where the [student] is privileged in terms of learning outcomes and opportunities provided by the mentor. The relationship implies trust and a commitment to the development of a professional identity, which is facilitated by the passing on of knowledge, expertise and experience from the older person who is professionally recognised in their field. (p. 19)

Within a music studio, the mentor serves as a role model and demonstrates how to approach technical/musical challenges with possible solutions and interpretations (Hays, 2012). Over time, the "individual experience, acceptance, and self-confirmation, through interaction with the mentor . . . support the [student's] identity as a musician. Simultaneously, the [student] supports the mentor's view of *self* as someone with wisdom, skill, and experience to share" (Hays, 2013, pp. 31-32). As the relationship

between the mentor and student develops, a sense of mutual trust increases. In addition, the student develops a greater sense of self-efficacy, and becomes motivated as a result of the mentor's attention and interest in their overall wellbeing (Hays, 2013).

Students pursuing postsecondary violin studies often require varying degrees of remedial work, and have to trust their teacher's pedagogical decisions and abilities. It is the responsibility of the teacher to have "patience, generosity of time, and a genuine interest in the welfare of the student where the mentor takes responsibility for the total development of the [student]. This include[s] the development of instrumental technique, musicianship and academic development" (Hays, 2012, p. 20). The performance standards within the postsecondary music environment are often demanding with intense degree requirements and deadlines. Students respond positively to these demands when their instructors are willing to meet their individual needs, and nurture well-rounded musicians with personalized goals (Presland, 2005). As students progress through their postsecondary degree, remedial pedagogy, and the emotional effects of correction are closely linked to Attribution Theory and Teacher Attribution Scaffolding Theory.

Attribution Theory

Attribution Theory incorporates behaviour modification and implications of motivation to explain why learners are motivated by pleasant outcomes or feelings of self-efficacy (Weiner, 1974, 1976, 1985). This theory emphasizes the learner's self-perceptions of success, failure, and the future tendency to repeat certain behaviours (Weiner, 2006). With respect to feelings of success or failure, Hallam (2002) states:

> The cases of success or failure can be seen as stable or unstable; controllable or uncontrollable and internal or external. If we attribute failure to something which

> is unstable, e.g. bad luck, which may not occur in the future, expectations about future performance are likely to be unaffected. However, if failure is attributed to a stable factor, e.g. lack of ability, then there will be an expectation of continued failure. (p. 236)

In applied music instruction, personal motivation and an implicit belief of ability are key factors in assessing the learner's willingness to persevere through stages of musical proficiency (B. Smith, 2005). Although personal success is often determined through comparison with others and subjective perceptions of individual performance, a love for music is a primary motivator for students to pursue music in higher education (Bandura, 1986, 1989; Bergee & Grashel, 2002; Jones & Parkes, 2010; Parkes & Jones, 2011, 2012). In a study examining the variables that impact young musician's abilities to perform, McPherson and McCormick (2006) determined that self-efficacy is a key predictor of performance achievement, goal setting, and personal perceptions of technical/musical abilities. For postsecondary violin students requiring rehabilitation to correct deficiencies, they may feel motivated to overcome various issues, or they may feel defeated. This is dependent on the amount of support received from the instructor and the means by which correction is addressed (Ferm, 2005; Hallam, 2002).

Teacher Attribution Scaffolding Theory

Violin instructors at any level of proficiency are expected to set goals, expectations for practicing, and assign repertoire that meets the technical/musical level of each individual student (Kennell, 2002). Through Teacher Attribution Scaffolding Theory, instructors make decisions "based on the teacher's attribution of why the student's performance succeeded or failed. The student's performance results from the

match between the requirements of the task and the existing capabilities of the student" (Kennell, 2002, p. 246). Kennell (2002) describes the studio environment as an "instructional laboratory" (p. 250), where the applied teacher's knowledge depends on subjective experiences and expertise. In violin lessons, instructors have personal standards and expectations in terms of techniques that are specific to the production of tone, intonation, bow technique, left hand position, and posture (Duke & Henninger, 2002; Kennell, 2002).

In the early stages of study, there are many factors involved in the learning process (e.g., the role of the parent, intentions of the instructor, and motivation of the student). Within the music studio, instructors make pedagogical decisions, verbalize instruction, provide feedback, and choose how they will approach correction (Kennell, 2002). In a study conducted by Creech and Hallam (2010), 263 violin teachers were surveyed to measure various interpersonal constructs of responsiveness and control, in addition to teacher self-efficacy and parental/student involvement. They concluded that "the circular, cyclical nature of efficacy may thus be greatly influenced by qualities of teacher control together with sensitivity to pupils" (Creech & Hallam, 2010, p. 418). Instructors have to be aware of the balance between pushing a student to their developmental limitations and focusing on musical enjoyment. Instructors also have the added responsibility of inspiring parents to be a part of their child's musical learning, while continuously encouraging self-efficacy in their students to persevere (Creech & Hallam, 2010). Creech and Hallam (2010) determined that at "the heart of this finding is the dilemma facing many teachers that in order to be effective they must be responsive leaders, providing authoritative direction but also compelled to respond to the individual

pupil needs and parental wishes or circumstances" (p. 418). Teachers often feel pressured to meet the expectations of parents and students, instead of trusting their well-meaning and informed pedagogical decisions. All of these factors in the early stages of musical instruction have the potential to affect the future musical success of students when pursuing higher education.

In postsecondary settings, effective teachers have the ability to be "doggedly persistent in diagnosing problems and formulating instructional correctives for remediation of the problem" in a manner that will encourage self-efficacy, metacognition, and motivation to persevere (L'Hommidieu, 1992, p. 301). Mimi Zweig (personal communication, April 6, 2013) stated in a recent pedagogy class that, in postsecondary settings, students are generally open to new information, and are motivated to accomplish goals as a result of their surroundings. She stated that it is the responsibility of instructors to be enthusiastic, to encourage all evidence of progress, and to relay the information in such a way that students are motivated to move to the next step in their development. In a qualitative study investigating the pedagogical strategies of a renowned string teacher, Dorothy DeLay, Gholson (1998) described various facilitative teacher interventions, which included strategies of creating a warm lesson atmosphere, using metaphors, highlighting important details within the repertoire, and focusing on areas that need further attention or exhibit weakness. This empirical evidence highlights that violin instructors at the postsecondary level must develop effective discernment skills in assessing the individual needs of students on a weekly basis and strategies in approaching technical/musical development (Gholson, 1998).

Attribution Theory and Teacher Attribution Scaffolding Theory become prevalent in situations involving first-year postsecondary violin students in need of corrective pedagogy. Although remedial work is often required for many postsecondary violin students, the philosophies and methodologies of Suzuki, Rolland, Galamian, and Zweig offer valuable knowledge surrounding sequential development, metacognition, and remedial strategies for instructors at any proficiency or teaching capacity.

Violin Pedagogical Methodologies

Shinichi Suzuki (1898–1998)

Shinichi Suzuki (1983) founded the Talent Education methodology in Japan, and fundamentally believes that all human beings are born with a natural ability to be successful at any task, provided that they are nurtured in an appropriate manner (Landers, 1984; Suzuki 1986, 1989, 1996). Suzuki (1986) observed that young children could speak Japanese fluently, and internalize both the language and the dialect by six years of age. This led Suzuki (1983) to argue, "If a child speaks his language fluently, he has developmental possibilities. Other abilities should therefore develop according to the way he is raised" (p. 5). Through the perspective of the Mother Tongue philosophy, Pea (2004) asserts that formats for language provide "a form of scaffolding for learning to use words and the acquisition of meaning" (p. 425). This innate learning ability in young children prompted Suzuki to apply the concept to music education (Barber, 1993; Barrett, 1995; Bauman, 1994; Beegle, 1999, 2000). As a result of this developmental principle, Suzuki was solely interested in teaching beginners as opposed to those requiring rehabilitation. He understood the importance of establishing a correct foundation from the outset, stating, "I am not interested in doing 'repair' work on people who can play

already. What I want to try is infant education" (Landers, 1984, p. 3). Suzuki's intent was to nurture his students through education to become better human beings, and not just musicians, as he believes, "First character, then ability" (Suzuki, 1983, p. 65).

In addition to language acquisition, Suzuki (1989) sought to understand the psyche and thought patterns of children to determine their motivations. He believes that positive encouragement through observation provides enough incentive for children to want to study the violin (Suzuki, 1989). Therefore, Suzuki's pedagogical methodology introduces violin lessons first to the parent to learn proper violin posture and beginning repertoire. Suzuki (1996) believes that after observing the parent, the child becomes motivated to undertake the serious practice and dedication required to play the violin, and the parent takes on the responsibility of being the teacher at home. In the early stages of learning, the parent extends the lessons at home through extensive modeling, imitation, and focused repetitions. Throughout the week, the parent also plays recordings of the various pieces being studied in order to reinforce appropriate tone and intonation, and practice passages with specific goals and repetitions to internalize technical/musical skills (Perkins, 1995). Suzuki (1983) states the following about the importance of repetition:

> We simply have to train and educate our ability . . . do the thing over and over again until it feels natural, simple, and easy. . . . If some skill is easy for you, that is evidence that it has been developed through training to such an extent that it has become a part of you. . . . Your purpose has been achieved by work and repetition until the skill has firmly taken hold in your consciousness. (p. 41-42)

As skills are acquired, repetition further develops rote learning by ear, memorization, and ear training, as students are engaged in focused actions and listening (Suzuki, 1983).

The practical application and effects of Suzuki's philosophies on the development of children have attracted the attention of researchers over the years. Empirical studies have examined the various behavioural patterns between Suzuki teachers, students, and parents, in addition to the importance of parental involvement, the age of the student at the outset of instruction, the positive effects of deliberate practice in Suzuki instruction, and cognitive development (Bugos & Mazuc, 2013; Duke, 1999; H. Jorgensen, 2001; L. Scott, 1992; Zdzinski, 1996).

In an empirical study, L. Scott (1992) examined the effects of specific activities on the attention and persevering behaviours of preschool children. Through an analysis of classroom and videotaped lessons, L. Scott (1992) determined that students involved in Suzuki instruction through private and group violin lessons scored significantly higher on attention and perseverance tasks than children engaged in other preschool activities. Through two separate studies, Duke (1999) observed 29 Suzuki violin instructors and gathered data with regards to behavioural patterns and instructional approaches. He stated that excellent Suzuki instruction is characterized by active student involvement with a large portion of the lesson devoted to student performance, student verbalizations, teacher talking, demonstrations, and physical positioning. According to Duke (1999), teachers tended to give more positive verbal feedback to female students than to male, and incorporated physical positioning more frequently with younger students than with older students. He also concluded that teachers tended to provide more verbal explanations to students who had parents with consistent weekly attendance and involvement in the lessons. The most significant finding in the studies was the high proportion of positive teacher feedback compared to negative, which is a fundamental aspect of Suzuki's

pedagogical philosophy (Duke, 1999). Although the outcome of student performance was not assessed, the importance of positive feedback, parental involvement, teacher modeling, and reciprocal learning were all demonstrated in these particular studies.

Furthermore, Zdzinski (1996) examined the relationship between parental involvement and performance outcomes of Suzuki students and determined that high parental involvement had a greater effect on younger students' overall performance and cognitive musical outcomes than older students. In addition, H. Jorgensen (2001) investigated the effects of age on musical success and determined that the standard of instruction in the early stages of development had a greater impact on technique and musicality in postsecondary education than the age of a student at the outset of instruction. These findings further emphasize the significance of appropriate early instruction and parental support in determining the potential of students' future musical success in higher education.

The Suzuki Talent Education philosophy is firmly rooted in the "building block" system of sequential learning. Suzuki (1983) adheres to consistency and efficiency in his methodological principles to ensure that students exhibit a level of technical/musical proficiency before introducing new skills. This parallels Vygotsky's (1978) zone of proximal development, which explains how children acquire skills when learning is propelled slightly ahead of development with the assistance and encouragement of a competent adult (Berk & Winsler, 1995; Bransford, Brown, & Cocking, 2000; Rogoff, 1990). As students are encouraged through the zone of proximal development, "the process of scaffolding brings about abilities that have been emerging and developing . . . and thus reveals the hidden potential of a child" (Gindis, 1999, p. 336). Suzuki promotes

step-by-step instruction through scaffolding and believes that the gradual accumulation of skills in a sequential manner leads to greater success in the future (Suzuki, 1996).

Researchers have also studied the practical implications of scaffolding in Suzuki instruction, in addition to the diverse ways in which instructors engage and encourage students in their weekly lessons (Colprit, 2000; Custodero, 2005). In an empirical study involving 12 Suzuki violin instructors, Colprit (2000) examined the types of performance goals within Suzuki lessons. The researcher determined that goals were verbalized in terms of musical results more so than left and right hand tasks. Colprit (2000) also stated that although the lesson formats often differed between instructors, the principal "mode of communication [was] teacher talk (information, directives, questions, approvals and disapprovals), followed by teacher modeling" (p. 217). This study demonstrates the importance of clear communication between Suzuki teachers and students, and the quality of instruction in the critical early stages of learning.

Custodero (2005) studied the notion of flow in Suzuki students, and determined that in their lessons, there was a distinctly high level of concentration, connection between awareness and action, loss of self-consciousness, and positive reception to immediate feedback and challenges (Csikszentmihalyi & Csikszentmihalyi, 1992). Csikszentmihalyi (1990) echoes these findings, stating that when a student is engaged, they become "completely involved in an activity for its own sake. The ego falls away. Time flies. Every action, movement, and thought follows inevitably from the previous one. . . . [One uses] skills to the utmost" (p. 28). This research supports Suzuki's (1989) contention that clear communication, goal setting, and challenging tasks increase student engagement as they sequentially acquire new skills.

Suzuki (1989) also places great attention on memorization from the beginning lessons. As a result, students can play any piece with minimal rehearsal because "exceptional memory relies on the formation and exploitation of highly ordered retrieval structures that are most stable when rehearsed extensively throughout the learning process" (Stewart & Williamon, 2008, p. 183). If young students establish and develop memorization skills, they override the physiological and psychological effects of performance anxiety (Ericsson & Kintsch, 1995; Suzuki, 1996). According to Suzuki (1983), when students incorporate these skills through focused repetitions, they develop the mind, body, and spirit, which then allows them to improve both technically and musically. Suzuki's organized, sequential approach to violin pedagogy encourages parental involvement, focused repetition of materials, systematic acquisition of skills, and memorization.

Paul Rolland (1911–1978)

Paul Rolland (1974b) studied the physiology of the human body and the physical mechanics required for successful violin playing. Rolland (1974b) formulated a methodology that promotes a strong technical foundation, muscle relaxation, and complete freedom with the instrument. According to Kempter (2003), children are "physical learners," and the establishment of a firm foundation in violin pedagogy "can be satisfying for both teacher and student because the need for rehabilitation is reduced; students can measure progress in concrete, observable ways; and advanced music is more satisfying when it is played without tension" (p. 5). Through this foundation, an internal structure is established where rhythmic accuracy, tone production, vibrato, shifting, and advanced bow strokes are layered, thus increasing the potential for musical expression

(Rolland, 1974b). Rolland (1974a) earned critical acclaim throughout the violin pedagogy field through the creation of the *Illinois String Project*. The project features 14 videotaped lessons where Rolland (1974a) systematically outlines appropriate setup, posture, bow hold, tone production, and remedial ideas with a group of young children at various ages and levels of proficiencies. Through the films, Rolland demonstrates the importance of using the whole body in violin playing and the priority of striving for mental and emotional wellbeing (Perkins, 1995).

Although Rolland and Suzuki share some foundational approaches regarding sequential skill acquisition, they have some contrasting views. Both Suzuki (1983) and Rolland (1974b) sought to nurture emotional wellbeing in their students and used scaffolding strategies as a means to sequentially acquire technical/musical skills. However, the basis of Rolland's (1974b) philosophy focuses on the hidden capacity of the central nervous system, how it operates beyond conscious awareness, and how the resulting technical skills develop effortlessly. Rolland's (1974b) action studies offer "a shift of emphasis from the 'teaching of notes and tunes' to the teaching of basic concepts and ideas. They focus on correct position, free movement, and healthy tone production" (p. 4). Rolland (1974b) encourages students to frequently repeat the action studies in order to develop and further train their muscles. He claims that "motion skills, whether in string playing or sports, are highly refined actions requiring coordination, timing, and patient practice" (Rolland, 1974b, p. 5) and must be repeated many times to maintain efficiency. In a similar fashion, incorrect motions that are reinforced over a long period of time require focused attention in order to reverse the instinctual habits (Rolland, 1974b). In an empirical study, Salzberg and Salzberg (1981) addressed the remediation of left

hand technique and determined that, in order to modify established motor skills, extensive reinforcement through corrective pedagogy is imperative. Rolland (1974b) views both technical development and rehabilitation in the same light as general muscle training, in order to ingrain skills correctly into the brain and muscles.

Through the process of internalizing simple action studies through scaffolding and repetition, other areas of violin technique develop (Rolland, 1974b). For instance, Rolland (1974b) encourages students to tap rhythms on the top of their violin to focus on rhythmic accuracy, promote a correct hand position, and develop early stages of vibrato. Vygotsky (1978) states that "what is in the zone of proximal development today will be the actual developmental level tomorrow—that is, what a child can do with assistance today [they] will be able to do by [themself] tomorrow" (p. 87). Through the action studies, Rolland inadvertently increased the technical and musical competence of his students. He first established left hand technique, and delayed the introduction of the bow until students exhibited proficiency with previous left hand studies. He also looked for a balanced posture, internal rhythmic understanding, and a loose left hand that was comfortable moving to the high positions on the fingerboard. Zweig (2011) states:

> Rolland had the genius to recognize that what we teach in the first lessons sets the stage for everything to come. . . . With innovative techniques that he developed, he addressed all the important issues about violin playing: Supporting the violin and balancing it on the collarbone, geographical understanding of the finger board, supple bow movements that define the basic bow strokes, shifting motions, and vibrato impulses. (p. 20)

Rolland was aware of these specific physiological responses and developmental

principles, and approached violin pedagogy in a holistic manner from the outset of instruction.

Ivan Galamian (1903–1981)

Ivan Galamian left a legacy that continues to have an impact on both performers and teachers. Galamian had a logical approach towards violin technique, artistry, and the discipline required to master the instrument. His methodology can be traced back to influences of the past to reveal personal inspiration and evolution from Capet and the French school of technique (Arney, 2006; Curtis, 1993; Cutler, 2003; Henkle, 1980; Lee, 2003). Galamian (1999) shares the belief with Suzuki (1983) and Rolland (1974b), that all children possess an innate potential for success, and that early youth is the best time to begin violin studies. However, Galamian (1999) disagrees with solely physiological perspectives, such as that of Rolland, and unlike both Rolland and Suzuki, he does not support the sequential process of developing new skills.

Galamian created a personalized approach to pedagogy with every student because he took into consideration unique learning patterns, in addition to varied physical, mental, and emotional circumstances (Green, 1993). Elizabeth Green (1993), a devoted student of Galamian, quotes him as saying that "the teacher who takes his mission seriously will see in every single student an entirely new and challenging problem. . . . Every student has to be tailor made–custom built" (p. 117). Galamian viewed every student as a new challenge and continually modified his pedagogical methodology to successfully nurture and develop individual artists.

Since Galamian had a unique pedagogical approach for every student, he did not have a specific rehabilitative methodology for corrective learning. He believes that it is

the responsibility of the teacher to "judge the potentialities of the student and decide whether there are hindrances in the way of their development; whether there are bad habits involved or dangerous tendencies present" (Galamian, 1999, p. 105). Galamian (1999) states:

> [Teachers] must know enough and be broad-minded enough not to classify as bad habits everything that does not conform exactly to [their] own personal way of playing. [They] should not look for deviations from rules but should try to find out whether there is any real handicap present that needs to be removed. (p. 105)

Every student has a unique physical and psychological makeup and Galamian challenged himself and other teachers to have flexibility in their pedagogical methodologies.

Although pedagogical flexibility is important to Galamian (1999), his main priority involves the connection between the mind and the muscles through "correlation exercises" (p. 99). Correlation exercises are comprised of rhythm and bowing permutations that address left and right hand technique individually, in addition to the complexities of coordination. Galamian (1999) believes that the link between the brain and the muscles is the key to technical mastery, control, facility, accuracy, and reliability of skills. In a similar fashion, Baader, Kazennikov, and Wiesendanger (2005) advocate the importance of correlation, stating that the contradictory actions between the bow arm and left hand must be mastered for artistic success. The correlation between the hands is continually challenged and becomes stronger when rhythms and bowings are added to scales, etudes, and repertoire (Galamian, 1999). Galamian (1999) encouraged his students to be self-sufficient, and his main objective in every lesson was to equip students with strategies to make technical/interpretive decisions on their own through metacognition.

Galamian (1999) stresses the importance of practicing the correlation exercises with focused attention, in order to minimize incorrect playing. He argues that the development of poor habits, as a result of mindless repetitive practicing, is detrimental to improvement because "mistakes are repeated over and over again and the ear becomes impervious to faulty sounds" (p. 94). When practicing, Galamian (1999) states, "Whenever one problem is mastered, it is useless to repeat it over and over again" (p. 95). This perspective contrasts with Rolland (1974b) who compares musicians to athletes and claims that the physiology of the body requires repetitive actions, even after mastery, to maintain proficiency. These differing pedagogical philosophies highlight the subjective nature of teaching, and the many diverse approaches to the instrument. In essence, Galamian encouraged the acquisition of individualized practice tools for technical/musical prowess, and self-sufficiency regarding interpretive decisions.

Mimi Zweig (1950–)

Mimi Zweig, founder of the Indiana University String Academy and Violin/Viola Professor at the Indiana University Jacobs School of Music, established an internationally renowned reputation for her commitment to violin pedagogy. In addition to her teaching contributions at Indiana University, Zweig has also received critical acclaim for her online pedagogical resource, *stringpedagogy.com*, which has had an impact on the field of violin pedagogy. Through Zweig's studies with Louis Krasner at Syracuse University, Raphael Bronstein at the Manhattan School of Music, Samuel Kissel, a proponent of the Dounis Method, and Nancy Cradle, a student of Paul Rolland, she accumulated diverse pedagogical knowledge over the years. Persson (2000) refers to this amalgamation of pedagogical ideas as "commonsense teaching that when published, can spread widely

among teachers at all levels, becoming [an] unquestioned instructional canon" (p. 27), with a shared body of knowledge about teaching practices and influences (Triantafyllaki, 2005).

Zweig's (2008) pedagogical methodology is comprised of the developmental philosophies of Suzuki, Rolland, and Galamian, because of their focus on establishing a healthy foundation and metacognitive awareness. Zweig (2008) explains:

> Establishing a healthy foundation for playing the violin is like growing a beautiful and strong tree. Without a secure root system, the tree will be blown away in the first storm. The same occurs in violin playing. A violinist must have a healthy foundation that can withstand the pressures of performing. The teacher guides the student in building a solid technical and musical foundation with a clear sense of the journey from the beginning sounds to the artist level. (p. 2)

Zweig's colleague, Brenda Brenner (2010a), echoes these sentiments, stating, "It is crucial to lay a solid foundation in the early stages because good habits established at the beginning level allow students to build on this foundation throughout their education" (p. 48). In order to nurture a strong technical/musical foundation, Zweig (2008) incorporates Rolland action studies through a relaxed physical setup, sequential Suzuki repertoire, Galamian correlation exercises, and effective practice strategies to encourage metacognition. Zweig (2011) claims that she was influenced by Rolland, because his teaching approach answered many of the personal questions that she had regarding the relationship of the body to the instrument in violin playing:

> Paul Rolland remains a major contributor to string education because he had a vision of violin development from the beginning to the artist level. To teach at the

> advanced levels, it is extremely helpful to understand from where we have come. All problems, regardless of how complicated, can be broken down into the simplest elements and solved with enough repetitions. All these years later, the Rolland legacy lives on through my students. (p. 22)

Through Rolland's influence, Zweig (2008) encourages natural movements from the beginning stages of learning in a nonjudgmental environment. Zweig (2008) believes that by creating a nonjudgmental atmosphere, students are able to view mistakes as learning opportunities and value experimentation as a means to solve problems.

Although Zweig follows an organized system of pedagogical principles, she challenges herself to be a better teacher by learning from others. She often refers to herself as a "sponge," whereby her ideas are not always original, but become an amalgamation of bits of information that she has accumulated over the years (Zweig, 2008). She frequently attends master classes, and states, "The task again becomes knowing when, intuitively, to use this information in order to deal with the special needs of each student" (as cited in Sabo-Skelton, 1998, p. 1227).

Zweig, like Galamian, believes that all students are physically, mentally, and emotionally unique, and tailors her pedagogical approach accordingly. Duffy and Jonassen (1992) echo this perspective, stating that "learners can only interpret information in the context of their own experiences, and what they interpret will, to some extent, be individualistic" (p. 139). This tailored approach to teaching was also inspired by Zweig's studies with Tadeusz Wronski (1915–2000) at Indiana University. Wronski formalized Zweig's approach to violin playing through "the steps of rehabilitation" (Sabo-Skelton, 1998, p. 1227) in order to correct previous technical deficiencies that she

claimed were established at the outset of her studies. This led to the creation of one of Zweig's (2008) most practical teaching tools, "rehabilitation" or "establishing a healthy foundation," which she implements with students who have had prior instruction, as a means to relearn and understand the fundamental techniques of violin playing.

Zweig's (2008) pedagogical progression of rehabilitation utilizes effective scaffolding strategies to aid in the reconstruction of prior knowledge. She initially addresses basic setup, including balance between the right and left hands, and exercises to ensure correct postural alignment. She then presents a systematic study of etudes, three-octave scales, shifting, finger dexterity, basic bow strokes (e.g., open string martelé bow stroke), repertoire, and vibrato, in a sequential manner, which eventually become a subconscious part of the student's technique. She most commonly applies this methodology with incoming first-year performance majors, students who have changed teachers, or older students who are technically/musically ready to progress to the next level of artistry.

The pedagogical methodologies of Suzuki, Rolland, Galamian, and Zweig are all comprised of an idealized, subjective progression of learning from the outset of instruction. They focus on the importance of a natural setup free from unnecessary tension, the accumulation of technique/musicality through scaffolding, and an individualized pedagogical approach for every student. Still, rehabilitation is often needed if students do not receive this type of appropriate instruction, with a focus on foundational learning from the outset of study.

Rehabilitation

Postsecondary violin students often find that when they pursue higher education, their technical/musical hindrances are accentuated and learning processes start over. Many students face the challenge of having to correct an improper bow grip, relearn the correct ways to shift, readjust postural alignment, address tension issues, and/or assess the ways in which bow strokes are properly executed in order to support artistic interpretations. According to Burt and Mills (2006), "There is an awful lot at stake, and [students] may begin to realize this as they 'take the plunge' and decide to pursue music to a professional standard" (p. 70). Students may experience low self-efficacy when their technical/musical limitations become apparent to their critical peers (Burt & Mills, 2006; Pitts, 2003). Rolland (1974b) states the following regarding the physical difficulties that emerge through remedial work:

> The main problem in replacing faulty motion patterns with new ones is that what feels right and reliable to the player is his usual way of doing it; what is right and has a "better future" feels clumsy and unnatural at the outset. (p. 179)

According to Rolland (1974b), while students are often resistant "of any 'change' in their manner of playing, discovery of a major fault or deficiency in their approach could result in dramatic improvement of their playing, far more so than the studying of a few new etudes or pieces" (p. 179). Throughout the remedial process, frequent repetitions of correct movements have the potential to penetrate into the student's playing if they are executed with focused intent and continual self-analysis (Rolland, 1974b).

Although researchers have studied various technical/musical issues that arise in students within classroom and private instruction, the specific remedial strategies that

postsecondary violin instructors implement with their first-year performance students have not been documented. In the literature, empirical studies have been conducted to determine: successful left hand remediation in young children, the effects of harmonic context in terms of intonation accuracy, factors in vibrato measurement and speed, the effects of verbal communication in relaying corrective feedback, the role of the teacher in private lessons, and how deliberate practice affects future progress (Cheslock, 1931; Garman, 1992; Geringer & Allen, 2004; Geringer & Witt, 1985; Geringer, Allen, & MacLeod, 2010; Gillespie, 1991, 1993; Mishra, 2000; Salzberg, 1980; Salzberg & Salzberg, 1981; Sogin, 1997).

Duke and Henninger (1998) examined the work of expert teachers within applied postsecondary settings to investigate what differentiates their teaching from other experienced teachers and novices. They specifically examined the effects of verbal directives versus negative corrective feedback in the process of correcting a student's playing. Duke and Henninger (1998) found that, in effective remedial instruction, students are given multiple opportunities to repeat specific tasks and correct errors that are identified through negative feedback. Learners "could successfully achieve a musical goal and view the experience as highly positive, irrespective of the rates of negative verbal feedback from the teacher" (Duke & Henninger, 1998, p. 491). This study provides implications for postsecondary instructors in terms of how "student performance achievement [is] a primary factor influencing students' attitudes and perceptions of self-efficacy" (Duke & Henninger, 1998, p. 491).

Duke (2000) determined through an investigation of prior research that both positive and negative teacher verbalizations yield an increased sense of self-efficacy in

students. These findings may "result from music's inherent reinforcing qualities" (p. 15) more so than the need for positive reinforcement from the instructor (Duke, 2000; Madsen & Duke, 1985). By contrast, Atlas, Taggart, and Goodell (2004) and Burt and Mills (2006) concluded that highly sensitive students were hurt by their instructors' criticisms, had difficulties communicating with their instructors, felt as though they improved less, and were emotionally affected by positive feedback. Duke and Simmons (2006) studied expertise within the music studio and determined that although instructors provide more negative feedback than positive feedback, the correction directly focuses on the technical/musical details. According to Duke and Simmons (2006), "When students achieve important goals, or independently create musical moments that are stunning to their teachers, the teachers give positive feedback that clearly expresses their excitement about the students' accomplishment" (p. 15). These conflicting research studies support the inevitable diversity in music instruction and the individuality of all students.

In addition to the effects of positive and negative verbalizations, researchers have studied the role of the teacher in private lessons through student learning outcomes (Duke & Simmons, 2006; Fredrickson, 2007; Gholson, 1998; H. Jorgensen, 2000; Rostvall & West, 2003; Young, Burwell, & Pickup, 2003). Barry and McArthur (1994) indicated differences between postsecondary and preuniversity instructors with respect to practice techniques. Furthermore, Krampe and Ericsson (1995) determined that the difference in performance ability in postsecondary students who have studied a similar number of years speaks to the differences in teaching quality, deliberate practice, and motivation (H. Jorgensen, 2001). According to Krampe and Ericsson (1995), "If students get appropriate instruction, we can expect that those who get more of this instruction have a higher

probability for reaching higher performance levels than those who have fewer years of appropriate instruction" (p. 236). The issue is not the starting age, but the standard of the instruction at all levels of proficiency. Although this pedagogical incongruity is supported in the literature, Duke and Simmons (2006) determined that successful artist teachers take heed of "the way students execute physical movements in every performance, and flaws in technique do not go unnoticed or unmentioned. When students demonstrate a fundamental flaw, that problem is addressed with utmost priority, superseding any other previously stated performance target" (p. 13). In both developmental and remedial work, this research implies that the role of the instructor is imperative in relaying appropriate information, effective practice strategies, and persistent feedback in order to affect learning outcomes.

The extant literature provides current and future violin pedagogues with meaningful knowledge surrounding the organized pedagogical methodologies of Suzuki, Rolland, Galamian, and Zweig, and the evident need for rehabilitation that ensues when the technical/musical foundation has been overlooked. Through this research study, I investigated the rehabilitative pedagogical strategies of postsecondary violin instructors. In the following chapter, I outline in detail the descriptive qualitative research design with elements of multiple case study to depict the exact protocol of the study.

CHAPTER III

METHODOLOGY AND RESEARCH DESIGN

In this chapter, I outline the characteristics of descriptive qualitative research, multiple case study research design, research procedure, participant recruitment process, data collection, power relations between the interviewer and the interviewees, interview questions, data analysis, and descriptive narrative format. I then conclude the chapter with a discussion of validity, potential biases, and ethical considerations.

Qualitative Research

All researchers have a variety of interpretations and perspectives of the world based on personal schemas, dominant ideologies, environments, socioeconomic backgrounds, embodied cognition, and nativism (Martinez, 2010). In research, this depicts the complexity and "messiness" of the world, and how through collective dialogue, researchers can respect diverse epistemologies and ways of viewing knowledge construction (Davis & Sumara, 2008; Klein, 2004; Songca, 2006). Research becomes a hermeneutic experience that is constantly evolving through learning, reading, making observations, and acquiring knowledge (Boell & Cecez-Kecmanovic, 2010).

Bresler and Stake (1992) state that the aim of qualitative research is "not to discover reality. . . . The aim is to construct a clearer experiential memory and to help people obtain a more sophisticated account of things. . . . The qualitative researcher chooses which reality to investigate" (p. 76). Qualitative research is holistic, particularly case oriented, and field oriented in a natural setting because researchers are concerned with various contexts (Creswell, 2008, 2013; Denzin & Lincoln, 2011). The research findings are descriptive, interpretive, and emphatic, with observations and interpretations

that are validated through rigorous analyses to reduce threats of bias (Denzin & Lincoln, 2005b; Guba & Lincoln, 1985, 1994, 2005).

In terms of writing and presenting the interpretive nature of qualitative research, Denzin and Lincoln (2005b) describe the visual image of "montage." They state that a "qualitative researcher who uses montage is like a quilt maker or a jazz improviser. The quilter stitches, edits, and puts slices of reality together. This process creates and brings psychological and emotional unity–a pattern–to an interpretive experience" (p. 5). Qualitative research can take the form of many different methodologies, where one chooses the most appropriate depending on the context of the research (Bogdan & Biklen, 2006). According to Denzin and Lincoln (2005a), qualitative research is reciprocal. The researcher is not above the researched, but instead is involved in the "process of discovery: discovery of the subject . . . and discovery of the self" (Guba & Lincoln, 2005, p. 210).

Descriptive Qualitative Research and Case Study

Descriptive qualitative research uses "'generic' qualitative methods (e.g., interviewing, open coding, constant comparison) to produce conceptual categories and themes" (Chenail, 2011, p. 1180). Descriptive qualitative research is:

> Basic, naturalistic, discovery-oriented. . . . [and] consists of "eclectic design" consisting of usual sampling strategies (e.g., purposeful and saturation), data collection (e.g., open-ended interviews), data analysis (e.g., categorization), and representational techniques (e.g., categories with exemplary quotes). (Chenail, 2011, p. 1180)

According to Sandelowski (2010), descriptive qualitative inquiry "is produced not from any 'pure' use of a method, but from the use of methods that are variously textured, toned, and hued" (p. 337) (Lambert & Lambert, 2012; Mayan, 2009). This research study is a descriptive qualitative research design based on elements of case study. There were limitations, based on the boundaries of the institutional context, access, and nature of one-on-one instruction within the postsecondary setting. Yin (2009) defines case study as an empirical inquiry that "investigates a contemporary phenomenon within its real-life context" (p. 13). Case study research could explore the following:

> [A] real-life, contemporary bounded system (a *case*) or multiple bounded systems (cases) over time, through detailed, in-depth data collection involving *multiple sources of information* (e.g., observations, interviews, audiovisual material, and documents and reports), and reports a *case description* and *case themes.* (Creswell, 2013, p. 97)

This research presents elements of multiple or collective case study, which is defined as "a number of cases studied jointly in order to investigate a phenomenon, population, or general condition" (Stake, 2005, p. 445), where the "inquirer purposefully selects multiple cases to show different perspectives on the issue" (Creswell, 2013, p. 99). While Merriam (2001) states that "there is no standard format for reporting case study research" (p. 193), Creswell (2013) outlines the need for a clear problem, description of context or setting, description of transactions, elements studied, and outcomes of the inquiry required in the case report (Simons, 2009; Swanborn, 2010; Thomas, 2011; Woodside, 2010).

Through this descriptive qualitative methodology with elements of multiple case study, violin instructors at the postsecondary level were given the opportunity to reflect on their current teaching practices and reevaluate their strategies when implementing remedial pedagogy at a variety of levels. The study also provided me, as an instructor, with the opportunity to gain insights into my own epistemologies and past teaching experiences, while investigating a variety of subjective pedagogical strategies implemented by postsecondary instructors.

Research Procedure

Participant Criteria

I initially intended to interview five to eight postsecondary violin instructors teaching in North America. The first step in the selection process was to identify the participants who met the following criteria: full-time, tenure-track violin instructors at a degree-granting postsecondary university, conservatory, or college, who had at least 10 years of postsecondary teaching experience. The criteria were established in order to potentially enrich the data by including instructors who could reflect on a diverse student body over time, in addition to pedagogical practices which may have evolved through experience. Initially, the criteria limited the potential pool of participants. As the recruitment process unfolded, the strict criteria were altered to include those who did not have tenure, or 10 years of teaching experience. The circumstances that led to this decision are outlined in detail in the following section.

For this study, I was interested in involving participants who have diverse artistic and pedagogical backgrounds to obtain a variety of perspectives and experiences. This research was intended to focus on the perceptions and practices of postsecondary violin

instructors, and not their students. However, a connection is established between the participants' personal educational experiences with remedial pedagogy and their students' remedial experiences.

Participant Recruitment

I first compiled a complete list of all degree-granting postsecondary institutions, colleges, and conservatories in the United States and Canada in early July of 2013. I used the *Directory of Music Faculties in Colleges and Universities, U.S. and Canada* as a source to identify all of the schools in alphabetical order: by province and by state. I visited every institutional website to determine if the institutions offered music degree programs and violin instruction, and compiled an extensive list of 321 institutions. I then used a random table of numbers to narrow the list down to 30 potential institutions (Gay, Mills, & Airasian, 2009). The incorporation of random selection at this point in time decreased the threat of potential biases.

From the list of 30 potential institutions, I emailed the Deans/Heads of the Music Departments at the first 15 to determine the initial pool of potential participants. In the email, I explained the purpose of the study and my interest in involving participants who met the specific criteria. I received replies from only a few Deans/Heads of the Departments stating which instructors at their institutions met the criteria.

A week and a half later, I contacted the instructors directly because of the lack of responses from the Deans/Heads of the Music Departments. I sent an email directly to all of the instructors at the first 15 institutions, except for the ones whom I was told did not have tenure. Two weeks following the initial email that I sent, I sent the email again to the instructors who met the criteria at the first 15 institutions. On the same day, I also

emailed the Deans/Heads of the Music Departments at the remaining 15 institutions. I heard from a number of the Deans/Heads of the Departments indicating that they did not have tenured faculty at their institutions, which limited the list of potential participants. A week later, I directly emailed the instructors who met the criteria at the remaining institutions. I received a reply from two potential participants who stated their interest in the study. Two weeks later, I emailed the instructors again in the hopes of yielding more responses. As a result of the lack of responses, I met with my supervisor, Dr. Jonathan Bayley, to discuss the next step in the recruitment process. We decided that it would be best to include those who did not have tenure or tenure track, but have at least 10 years of teaching experience. Following our meeting, I emailed the potential participants at the institutions where the Deans/Heads of the Music Departments stated that they did not have tenure. This entire process took approximately two months to complete.

In early September of 2013, I compiled a list of seven potential participants who expressed an interest in the study, and promptly emailed a letter of information and a letter of consent to be signed. (See Appendices C, D, E). The consent form outlined the participants' privacy and confidentiality throughout the study, in addition to their right to withdraw at any time. The consent form also informed the participants that their identities and personal information would be known only to my supervisor and I, and would be kept confidential until I received their permission following the data collection. Within one week, I received three signed consent forms and began to schedule interview dates. Two weeks prior to every interview, I mailed a hard copy of the research questions and interview questions to encourage meaningful reflections. (See Appendix F for the semi-structured interview protocol). In addition to the questions, I also supplied the

participants with a small notebook to record personal ideas or reflections with regards to rehabilitation as it applied to their teaching practice, and to aid in memory recall during the interview. One week after I sent the initial email to the potential participants, I sent the email again to the four remaining participants whom I had not heard from, which yielded one more participant.

Two weeks after I sent the initial email to the non-tenured instructors, I sent the email again to potentially acquire a few more participants. At this point, I had not received a response from the three remaining participants who had stated their initial interest in the study over the summer. I directly contacted the remaining participants, and called their office phone numbers that were publically listed on their institutional websites. I spoke with one potential participant who scheduled their interview over the phone, and another who decided to withdraw their participation in the study because of time commitments. One other participant had a phone message stating that their absence was due to concert commitments in Europe until the end of September. I contacted this potential participant over the telephone the first week of October, and they agreed to participate.

At this point in my recruitment, I had sent many emails, and believed that any more would seem like I had overstepped boundaries. According to Shenton and Hayter (2004), elite individuals are often highly visible in theory, but are not necessarily easy to access. Dr. Bayley suggested that I send my doctoral committee an update and inquire whether participants could provide names of potential participants, or if I could interview instructors whom I personally know. This idea was sparked at the end of my first interview. The participant suggested that I contact a renowned pedagogue whom they

believed would have intriguing ideas regarding rehabilitation. There was a clear desire for random sampling but, as a result of participant input, an additional name was added due to the perceived benefit for the study. Before receiving any responses from the committee, Dr. Bayley suggested that I send one more email to the entire pool of participants with whom I had not had any correspondence with up to this point. In the email, I thanked all those who gave of their time in discussing their pedagogical strategies, and stated that for those who did not have the chance to respond, it was not too late. Within a few hours of sending the email, I heard from three potential participants stating their interest in the study.

A week following the email that I sent to the committee, I received helpful emails from two committee members stating that the participants could provide potential names. They stated that it would not affect the initial randomization of the sample, because the instructors choose to be a part of the study in the end. I responded with an update, letting the committee know that I had nine potential participants as a result of the last email that I had sent to the pool of potential instructors. Using their university website, I then located the email address of the renowned pedagogue suggested in my first interview. I sent an email explaining their recommendation, described the study, and received a response within a few days stating their interest in the study.

One participant asked to schedule their interview on the same day of our initial scheduling correspondence. I was surprised at the lack of reflection and time to review the questions, but I understood that postsecondary violin instructors have busy schedules and time commitments. Unfortunately, the participant did not review the criteria in the consent form when they agreed to be a part of the study, and had less than 10 years of

postsecondary teaching experience. I informed Dr. Bayley of the circumstances, and he said to keep the data. All of the interviews were completed by early November of 2013.

Data Collection

Self-Analysis

The data collection first began with a self-analysis in July of 2013. As the researcher, my self-analysis provided a personal connection to the study through the presentation of my own experiences of undergoing and implementing remedial strategies with my students. In terms of assuring greater validity, I responded in detail to all of the questions to determine duration, flow, and content. As Mikecz (2012) states, "The importance of the researcher's positionality throughout the research process must not be underestimated" (p. 490). The self-analysis also provided an understanding of how to best proceed with the study, and served as a means of exploring possibilities as the researcher. Yin (2009) recommends that all researchers engage in a pilot test of sorts in order to refine plans for the data collection process. I also conducted a pilot interview with my supervisor, Dr. Bayley, who served as an external source to increase validity.

Interviews

According to Lambert and Lambert (2012), data collection in descriptive qualitative studies "involves minimal to moderate, structured, open-ended, individual or focus group interviews" (p. 256). Interviews are common in qualitative research studies as a means of obtaining an insider viewpoint of the issues being studied (Denzin & Lincoln, 2005b). Seidman (2005) states, "Interviewing is both a research methodology and a social relationship that must be nurtured, sustained, and then ended gracefully" (p. 95). Interviewing relationships are a reflection of the personalities of those involved, present

subjective ways of interaction, and are affected by the underlying social contexts (Seidman, 2005). Berg (2008) explains this interview phenomenon:

> All discussions of interviewing are guided by some model or image of the interview situation, and here interviewing is perceived as a social performance. . . . The symbolic action that passes between actor and audience. . . . The language of dramaturgy [can be] applied metaphorically to a concrete situation—namely, the interview. (p. 67)

Interviewing is often described as an art or a game rather than simply a skill or conversation with purpose (Berg, 2008). Researchers use interviews to gain knowledge of the experiences of the participants through their own personal stories (Seidman, 2005). According to Mishler (1986), story telling has become one of the ways in which human beings understand themselves and their social context. This makes interviewing the ideal means to get a sense of the interviewee's story and the researcher's story (Mishler, 1986).

In this study, I interviewed the participants using a semi-structured interview protocol, which encouraged flexibility and an opportunity for deeper insights into various rehabilitative approaches, influences, experiences, and assessment strategies (Berg, 2008; Seidman, 2005). The semi-structured format allowed the interviews to be "more honest, morally sound, and reliable, because it treats the respondent as an equal, allows him or her to express personal feelings, and therefore, presents a more 'realistic' picture than can be uncovered using traditional interview methods" (Fontana & Frey, 1994, p. 371). Kvale and Brinkmann (2009) refer to semi-structured interviews as a "semi-structured life world interview . . . with the purpose of obtaining descriptions of the life world of the interviewee in order to interpret the meaning of the described phenomena" (p. 3).

Through semi-structured interviews, the researcher is challenged to preserve the participants' perspectives and responses within the context of their personal environments (Creswell, 2013).

I audiotaped and transcribed the interviews to ensure accuracy. The interview process took approximately two months to complete, with all 10 occurring over the telephone or over Skype (audio only). Although eye contact and body language are at times important in qualitative research, there is a strong possibility that participants were more transparent knowing that they did not have to "perform" on camera in an audio interview (Berg, 2008; Opdenakker, 2006). Throughout every interview, I took handwritten notes to further the discussions if needed, to track the interview, and to write potential follow-up questions.

Interview Questions

I organized the interview questions into four categories. The first category focused on the demographic background of the participants. These questions provided a sense of their responsibilities and engagement in the institution where they teach, in addition to their teaching assignment. The second category of questions addressed aspects of early instruction. These questions were structured to identify the participants' experiences as young students, and the teaching methods that they were exposed to during the critical years of early instruction. The input from the participants reflected their personal perspectives regarding the nature of their learning in the early stages and possibly how it affected their teaching at the present time. The next category of questions focused on the participants' pedagogical influences. The intent of these questions was to get a sense of who they believed influenced them the most with regards to

teaching/learning and possibly rehabilitation throughout their own studies. The fourth and final category of questions addressed the specifics of rehabilitation: their beliefs relating to the need for rehabilitation, the specific strategies that they implement with their first-year students, and their experiences with respect to the nature of students' responses to correction. The questions were organized in such a way that the participants' demographics, early experiences, pedagogical influences, and current views of rehabilitation would convey meaningful data.

Data Storage

Throughout the study, I maintained the raw data in an organized manner through audio and paper files to allow for efficient retrieval and analysis. The audio files were uploaded from the recording devices onto my computer and kept in a secure folder that was only accessible by a passcode. The audio files were manually transcribed within a few days of each interview and the paper files were kept in a secured (locked) drawer. My supervisor and I were the only ones with access to the data. Within a few days of each interview, I emailed the participants asking if they were interested in receiving a transcribed copy of their interview, in order to check the information for accuracy through the procedure known as member checking (Merriam, 2001). Only one participant requested to review their interview transcript, and did not respond with any additions, deletions, or concerns. The other participants stated that they trusted me, knew what they had said in their interview, and only requested a summary of the results. I also asked the participants if I could contact them throughout the data analysis process if follow-up questions arose and if I had permission to use their real names in the final document. They were all encouraging and receptive to the possibility of follow-up contact and gave

permission to use their real names.

Small Notebooks

In addition to the hard copy of the research questions and interview questions, I also sent a small notebook to the participants. I communicated to the participants that the notebook should be used to record any thoughts, ideas, questions, or comments that arose when reviewing the questions. In addition, the notebooks would serve an important purpose of aiding memory recall throughout the interview. The intent of the notebook was to serve as an additional data source, and not as a means to determine whether they put into practice what they had said in their interviews. The participants are skilled professionals with national and international reputations. Throughout the interviews, they all provided detailed answers and some referred to their personal notes.

Following each interview, I emailed the participants asking if they could mail their small notebooks back to me if they believed that there was pertinent information written down that would add to the data. I received a response from only one participant, who stated that they did not write in the notebook, but would mail their studio handbook because it reinforced the material we discussed in the interview. For some of the participants, note taking was not possible, as their schedules only permitted a short amount of time between our initial correspondence and their interview.

Data Analysis

Transcriptions

The process of data analysis involves "making sense out of text and image data . . . conducting different analyses, moving deeper and deeper into understanding the data, representing the data, and making an interpretation of the later meaning of the data"

(Creswell, 2003, p. 190). Kvale and Brinkmann (2009) state that when researchers transcribe their own interviews, they "have the social and emotional aspects of the interview situation present or reawakened . . . and will already have started the analysis of the meaning of what was said" (p. 180). According to Agar (1980), researchers should then read the transcripts multiple times in order to understand the details, and get a sense of the entire interview before beginning the analysis. Through this process, "the researcher's consciousness [plays] a major role in the interpretation of [the] interview data, [and] that consciousness must interact with the words of the participant recorded as fully and as accurately as possible" (Seidman, 2005, p. 114). Following the data collection, I uploaded the audio files onto my iPad, using the *Tempo SlowMo* (2015) application, and completed each transcription within a few days of the interviews.

Data Analysis in Descriptive Qualitative Research and Case Studies

According to Gay, Mills, and Airasian (2009), "Data analysis in qualitative research involves summarizing data in a dependable and accurate manner and leads to the presentation of study findings in a manner that has an air of undeniability" (p. 448). More specifically, data analysis in descriptive qualitative research is "purely data-derived in that codes are generated from the data in the course of the study . . . by simultaneous data collection and analysis" (Lambert & Lambert, 2012, p. 256). Utilizing my own transcriptions, I analyzed the data simultaneously with the data collection through a constant comparative approach (Boeije, 2002). I read each transcript thoroughly multiple times, and made notes in the margins in terms of general categories. According to Gay, Mills, and Airasian (2009), "It is important that [the researcher] write notes in the margins or underline sections or issues that seem important to [them] so that [they] will

have a record of [their] initial thoughts and sense of the data" (p. 450). Once I was comfortable with the data, I then moved on to categorize the most descriptive topics through coding (Creswell, 2003) in order to organize the "data into chunks (analysis), and [bring] meaning to those chunks (interpretation)" (Rossman and Rallis, 2012, p. 262).

Creswell (2003) encourages researchers to analyze their data for codes that readers may expect to find, for codes that could be surprises, and for others that support the larger theoretical framework. From these codes, researchers should then decide on basic themes from each interview, cluster together certain topics, and finally go back and turn the topics into categories to be analyzed across cases (Creswell, 2003, 2013). In a similar fashion, Seidman (2005) explains the process of categorization and coding stating that the "participants have spoken, and now the interviewer is responding to their words. . . . What emerges is a synthesis of what the participant has said and how the researcher has responded" (p. 127). Through this process, passages may connect to other passages, the repetition of certain experiences may become evident, and excerpts may connect to other literature (Rowan, 1981; Seidman, 2005; Yin, 2009). Gay, Mills, and Airasian (2009) claim that the next step involves "developing thorough and comprehensive descriptions of the participants, the setting, and the phenomenon studied to convey the rich complexity of the research" (p. 450) and understanding the context of the study through a narrative picture of each participant and setting.

Similarly, both Yin (2009) and Seidman (2005) suggest that the researcher should note materials of interest from each case, identify key issues, and then look for common themes that emerge beyond the cases by categorizing them. Creswell (2013) states the following in terms of case study analysis:

> When multiple cases are chosen, a typical format is to provide first a detailed description of each case and themes within the case, called a *within-case analysis*, followed by a thematic analysis across the cases, called a *cross-case analysis*, as well as *assertions* or an interpretation of the meaning of the case. In the final interpretive phase, the researcher reports the meaning of the case, whether that meaning comes from learning about the issue of the case . . . or learning about an unusual situation. (p. 101)

Through a thorough content analysis of the interview questions in relation to my categorization of general themes, I wrote an analysis of each separate case (Yin, 2004, 2009). I formatted the data under the broad headings of the interview questions, starting with demographic backgrounds, early education, pedagogical influences, and rehabilitation. Under the rehabilitation section, I utilized each research question as headings and categorized the data under them. This involved some intuitive interpretation, because the interview questions did not sequentially follow the research questions.

Upon completion of each individual case, I then organized the data through a large cross-case analysis. Creswell (2013) states that at this point in the analysis, the researcher "develops *naturalistic generalizations* from analyzing the data, generalizations that people can learn from the case either for themselves or to apply to a population of cases" (p. 200). According to Seidman (2005), the researcher has to take the analysis a step further:

> Researchers must ask themselves what they have learned from doing the interviews, studying the transcripts, marking and labeling them, creating profiles,

> and organizing categories of excerpts. What connective threads are there among the experiences of the participants they interviewed? How do they understand and explain these connections? What do they understand now that they did not understand before they began the interviews? What surprises have there been? What confirmations of previous instincts? How consistent have their interviews been with the literature? How inconsistent? (pp. 128-129)

The cross-case analysis was a daunting task, because there were extensive written data. I took each individual case, and went question by question to determine how to combine the information through coding and categorization. I used the same format as the single case analysis, by categorizing the information under the broad topics of the interview questions and the research questions. The participants had extensive knowledge of the subject area, many years of experience, and a commitment to the project. I was impressed with the thoroughness and detail in all of the responses and decided that follow-up questions were not necessary for further clarification. In essence, this in-depth process encouraged me to find meaning in the data, to dig deeper into the intricacies of the participants' experiences, and to fashion a narrative from the interactions, with the hope of bringing meaningful knowledge to the area of study.

Multiple Sources of Data

According to Gay, Mills, and Airasian (2009), the use of multiple data sources helps the researcher "obtain a more complete picture of what is being studied and to cross-check information" (p. 377). Through this process, the researcher constantly pulls apart the data, puts it back together, and looks for distinct patterns throughout the cases and sources (Creswell, 2013; Stake, 2005). In this particular participant pool, it would

have been inappropriate to observe one-on-one private lessons because of confidentiality issues within the context of postsecondary boundaries and the possible threat of identity performance. In addition to the interview data, multiple data sources were used to increase the validity of the study, strength of the research, and enrich the data. These sources include: my personal reflective notes, historical violin pedagogical resources, YouTube videos, websites, blogs, and studio handbooks.

Reflective Practice

In qualitative research, a reflexive approach is accepted as a means to record presuppositions, choices, experiences, and actions taken throughout the research study (Harrison, MacGibbon, & Morton, 2001; Ortlipp, 2008). Throughout the recruitment process, I kept a journal of the exact sequence of events, correspondence with potential participants, and protocol. This aided in my recollection of the sequential nature of the recruitment in detail. In addition, I kept a reflective journal throughout each interview to track the data and write potential follow-up questions. According to Ortlipp (2008), "The interviewer's thoughts, feelings, fears, and desires impact on the interview, but they are not visible in the data or the transcriptions. The process of reflection helps to bring the unconscious into consciousness and thus open for inspection" (p. 703). I wrote detailed notes in the margins of each interview transcript in order to: describe my initial interpretations and thoughts, comment on various answers, make connections, write potential questions to be addressed in the discussion, and begin the initial coding process of the main themes that emerged.

Results and Descriptive Narrative Format

All writing is situated within a stance or position and reflects a specific social context, class, gender, culture, and personal interpretation (Creswell, 2013). Creswell (2013) explains this concept of reflexivity and self-location when writing qualitative research:

> Qualitative researchers today acknowledge that the writing of a qualitative text cannot be separated from the author. . . . How we write is a reflection of our own interpretation based on the cultural, social, gender, class, and personal politics that we bring to research. . . . Qualitative researchers need to "position" themselves in their writings. (p. 215-216)

In descriptive qualitative studies, the researcher typically presents straightforward and organized writing in a logical manner (Lambert & Lambert, 2012). According to Creswell (2013), the overall intent behind a case study should clearly emerge for the reader and shape the larger written structure of the narrative. In addition to personal interpretation, all researchers have to ensure that the participants approve of their portrayal in the study, and that they transparently share their true feelings and opinions (Creswell, 2013). Throughout the cross-case analysis, I sought to maintain the voice of the participants through my interpretations. In addition, I was respectful to alleviate potential offences by not including information in the analysis when the participants expressed their discomfort in their responses regarding certain individuals or circumstances.

The iterative process of categorizing common themes through cross-case analysis helped me to decipher the validity of the information that was conveyed from a variety of

sources over a period of time (Hatch, 2002; Rossman & Rallis, 2012). I formatted the results in a similar fashion to the data analysis, under the broad scope of the research questions. I made connections between the themes, the theoretical framework, and other meaningful research studies. In addition to my own interpretations and questions, I included implications of how the knowledge could affect the field of violin pedagogy.

Yin (2009) believes that, in essence, all studies have a story to tell. He states, "The story differs from a fictional account because it embraces your data, but it remains a story because it must have a beginning, end, and middle. The needed analytic strategy is your guide to crafting this story" (p. 130). Through this descriptive qualitative methodology with elements of multiple case study, the participants had the opportunity to reflect on their remedial strategies from a variety of angles and contexts: through the lens of their own personal education, teaching experiences, and influences, while reevaluating their pedagogical approaches in an applied context.

Validity and Potential Biases

The participants are highly respected pedagogues, and it can be assumed that they answered the interview questions honestly and accurately. The nature of the research questions and the subject area under investigation are subjective and personal. Therefore, the participants had control of the interview situation, as they decided whether to openly share their thoughts and strategies or to withhold information for various reasons. According to Angen (2000), validation is "a judgment of the trustworthiness or goodness of a piece of research" (p. 387). In qualitative research, this is evident through ethical and substantive validation:

> Ethical validation means that all research agendas must question their underlying moral assumptions, their political and ethical implications, and the equitable treatment of diverse voice. . . . Our research should also . . . raise new possibilities, open up new questions, and stimulate new dialogue. (Creswell, 2013, p. 248)

Qualitative research should carry transformative weight and present the researcher's concrete understanding of the materials through the written study (Creswell, 2013). According to Creswell (2013), "Self-reflection contributes to the validation of the work" (p. 248). The reflective process that I engaged in throughout the study, in addition to my self-analysis, pilot interview with Dr. Bayley, and the use of multiple data sources increase both the validity and reliability of the research.

From the outset of the study, I acknowledged possible biases and preconceived opinions based on my own personal experiences with the research topic, and sought to remain as an insider-outsider researcher (Acker, 2000; Dwyer & Buckle, 2009). According to Acker (2000), "Our multiple subjectivities allow us to be both insiders and outsiders simultaneously, and to shift back and forth, not quite at will, but with some degree of agency" (p. 205). In a similar fashion, Nunkoosing (2005) discusses the difficulties that interviewers often face when distinguishing truth, authenticity, resistance, power, and the projection of their own self in relation to their status, race, gender, and culture. In the initial correspondence with the participants, I was perceived as an "outsider" graduate student. Throughout the interview process, I shared common knowledge, experiences, connections to the topic areas, and credentials, which elevated my "insider" status amongst the participants. As a researcher, student, and teacher, I

experienced a continual insider-outsider shift throughout the data collection (Acker, 2000; Healey & Rawlinson, 1993).

Throughout the data collection, I asked every participant the same questions through the semi-structured interview protocol. I was sensitive to their willingness to share their pedagogical and experiential knowledge, and did not probe for answers if the participant was hesitant to share. I also respected responses that contradicted my own personal beliefs, acknowledged my subjectivity, and worked through any preconceived biases that arose during the research process. These potential biases included: incomplete recollection by the interviewee, response bias, and identity performance (Mishler, 1999). Mishler (1999) states that the interviewee often expresses what they think the interviewer would like to hear. Through identity performance, "we express, display, make claims for who we are–and who we would like to be–in the stories we tell and how we tell them. In sum, we perform our identities" (Mishler, 1999, p. 19). Although I trusted the participants in terms of honestly presenting their philosophies and experiences, I frequently took these potential biases into consideration throughout the data collection and analysis.

In addition, I sought to maintain the raw data in an organized, and secure manner to ensure that only my supervisor and I had access to the personal information of the participants. I also tried my best to portray every participant and their story with accuracy and integrity, and have provided them all with the opportunity of member checking (Merriam, 2001). This ensures that the participants are in agreement with what has been said in the interview, and that they are confident in the material that could be potentially published.

Ethical Considerations

In compliance with the *Tri-Council Policy Statement* (Canadian Institutes of Health Research, Natural Sciences and Engineering Research Council of Canada, & Social Sciences and Humanities Research Council of Canada, 2010), all participants received a consent form stating that their involvement in the study is voluntary, that they are able to withdraw at any time, their potential risks and benefits, and the purpose of the research. Although the interview process was limited to postsecondary instructors, I did not exclude anyone based on race, gender, sexual orientation, ethnicity, disability, religion, language proficiency, or age. Privacy, confidentiality, and security were main priorities in the data collection and analysis process, as these issues are a fundamental human right. In identifying potential conflicts of interest, Mimi Zweig and other pedagogues with whom I have a personal relationship could have been included in the pool of potential participants.

I analyzed the interview data, along with multiple data sources through single case and cross-case analysis (Creswell, 2013; Yin, 2009). In the following chapter, the common themes that arose through categorization are documented under the broad headings of both the interview and research questions.

CHAPTER IV

RESULTS

I begin the chapter with an outline of the demographic background of the participants, including their current teaching responsibilities and experiences within the field in meeting the criteria for the study. I present the next category of early educational experiences under themes of common instruction within the public school system, nontraditional, and Suzuki instruction. I then move on to an examination of the pedagogical influences of the participants. Many similarities emerged throughout the analysis, resulting in broad categories of effective practice methods, metacognition, love for music, technical approaches to the instrument, performance practices, communication, and psychological health. The pedagogical genealogy of the participants is documented in the analysis in order to support their approaches to remedial work, before examining the details of rehabilitation.

I begin the analysis of rehabilitation with an explanation of the semantics and the personal physical and psychological experiences of the participants. A connection is established between the participants and their students as a result of their personal engagement in remedial pedagogy throughout their studies. I then examine the technical/musical aspects of playing requiring rehabilitation, the reasons why rehabilitation is required in first-year performance students, the pedagogical strategies the participants use, and how they implement remedial work with their students.

In addition, the participants discuss their pedagogical evolution over time, the psychological health of students, and both the postsecondary and pedagogical challenges that they experience when implementing rehabilitation. The responses of the students,

expressions of self-efficacy, successful outcomes, and greatest rewards for the instructors conclude the data analysis. Throughout the data analysis, the participants present considerable breadth and depth of knowledge and expertise, and reveal valuable information about remedial pedagogy and correct early development.

Demographic Background of the Participants

The 10 participants have diverse pedagogical backgrounds and personal experiences that have influenced their current teaching assignments, responsibilities, and philosophies. They are all employed at various degree-granting postsecondary institutions in North America, and cover a wide range of demographics, including schools in both urban and rural centres. The participants also have varying lengths of teaching experience, ranging from seven years to 59 years. This span of experience has shaped the pedagogical approaches of the instructors, including the evolution of their teaching strategies.

The first interview took place on September 28th, 2013 with the former Dean Emeritus of the Juilliard School, Stephen Clapp[5]. The Juilliard School is a world-renowned institution that has a reputation for high artistic standards. The audition process screens those who do not meet the technical and musical expectations, leaving little room for applicants with apparent deficiencies. Upon acceptance into the music performance program, Clapp had certain technical and musical expectations for his students that he sought to refine. Clapp shared his stories and anecdotes about Dorothy DeLay, and suggested that I interview Brian Lewis. He also mailed his studio handbook, which contains valuable pedagogical knowledge. Clapp had extensive teaching experience, spanning a told of 59 years, with 46 of those years at the postsecondary level.

I interviewed Dr. Kurt Gilman over the telephone in the morning of September 30th, 2013. Gilman recorded thorough notes and referred to them throughout his interview. Gilman has been teaching at the postsecondary level for 38 years, and is currently an Associate Professor of Violin and Viola and Director of String Activities at Lamar University in Beaumont, Texas. Prior to postsecondary teaching, he taught for nine years as an undergraduate and Masters student while studying at The Eastman School. In addition to his teaching duties, Gilman conducts the Lamar Civic orchestra, teaches both upper and lower string methods classes, and music appreciation.

I called Gisèle Dalbec-Szczesniak in the afternoon of September 30th, 2013. It was interesting to share similar experiences as a fellow Canadian and having studied with the same instructors throughout our education. Throughout the interview, she transparently shared personal experiences with rehabilitation throughout her studies. Dalbec-Szczesniak is an Adjunct Lecturer in Violin (Music Education, Strings) at Queens University in Kingston, Ontario, Canada. She presently teaches violin, chamber music, and string pedagogy classes. She has been teaching at the postsecondary level since 2000, and prior to that, she taught while studying at the University of Toronto. In total, Dalbec-Szczesniak has 39 years of teaching experience.

Dr. Wanchi Huang graciously agreed to be a part of the study in the midst of preparing for a trip to China. Our interview was scheduled a few days after she returned, in the evening of October 5th, 2013 over the telephone. Although she did not have adequate time to review the questions, she was energetic and excited to share her remedial experiences and perspectives. Huang has had extensive teaching experience, teaching the violin for a total of 25 years, with 19 years at the postsecondary level. Her

primary responsibility as a Professor at James Madison University in Harrisonburg, Virginia, is teaching studio violin, in addition to weekly master classes.

Dr. Nancy Bargerstock was interviewed late in the evening of October 6th, 2013 over Skype. Throughout her interview, she shared personal and pedagogical struggles that she faces at her institution and the wide variety of student circumstances. This interview gave me a "raw" perspective of the difficulties many postsecondary instructors face on a daily basis. Bargerstock has been teaching the violin for a total of 42 years: 37 at the postsecondary level and five while studying in university. At present, Bargerstock is a Professor of Violin at the Appalachian State University, Hayes School of Music, in Boone, North Carolina. In addition to coaching chamber music, she also teaches a required pedagogy course for all performance majors, an orchestra repertory course, and a violin literature course.

Dr. Brandon Christensen scheduled his interview shortly following a month-long concert tour throughout Italy. We spoke over the telephone in the early morning of October 9th, 2013. We shared similar experiences from our studies at Indiana University, and he stated that my background gave him an indication of how in-depth he could answer the questions. Christensen has been teaching a total of 32 years, with 16 years at the postsecondary level. He is currently a Violin and Viola Professor at the Southeast Missouri State University in Cape Girardeau, Missouri, where he has held a position since 2002. In addition to his teaching responsibilities, he is also head of the string chamber music department and concertmaster of a combined community/college orchestra. On any given year when his studio is smaller in size, he also teaches a service class and a music appreciation class.

Emlyn Ngai was interviewed over Skype on October 18th, 2013. After sharing my personal background with him, he commented on knowing my hometown because of the famous hockey players–the Esposito brothers–who are also from Sault Ste. Marie. Throughout the interview, time was not an issue: his answers were thoughtful, insightful, and philosophical, as he openly talked about his musical family and his pedagogical influences with genuine care. Ngai has had 15 years of teaching experience and is currently an Artist Teacher at the University of Hartford, Hartt School of Music in West Hartford, Connecticut. Ngai has had 14 years of teaching experience at the postsecondary level and currently teaches violin, chamber music, and performance practice courses. He also coordinates a Baroque ensemble, and during the summers, he offers performance practice workshops for professional string instructors.

I interviewed William Wolcott on October 23rd, 2013 over the telephone. He transparently shared his personal experiences, and at the end of the interview, he was eager to continue our conversation by offering personal advice and wisdom. Throughout the interview, he challenged my questions and perceptions of rehabilitation. Wolcott, Violin Professor at the University of Nebraska in Omaha, Nebraska, has been teaching a total of seven years at the postsecondary level. In addition to teaching violin, he also coaches chamber music ensembles. In total, Wolcott has had 18 years of teaching experience, which has had a significant impact on his pedagogical views towards both students at the postsecondary level and young children.

I called David Gillham on October 29th, 2013. We both shared educational ties and personal anecdotes about Indiana University (IU) and Zweig, as he studied at IU and taught at her summer String Academy program the year prior. Gillham has been teaching

at the postsecondary level since 2002, and prior to that, he was the teaching assistant to Martin Beaver at the Peabody Conservatory. At present, Gillham is an Assistant Professor of Violin and teaches chamber music at the University of British Columbia in Vancouver, British Columbia.

I called Brian Lewis in the evening of November 9th, 2013. Lewis gave three hours of his time to discuss his experiences with rehabilitation and share stories about his studies with Suzuki and DeLay. I did not feel as though our conversation was an interview, but as a means to learn valuable knowledge and preserve a legacy. Lewis began teaching the violin when he was 15 years old, as a high school student. In total, he has been teaching for 32 years, with 28 of those years devoted to postsecondary instruction. Lewis is currently a Violin Professor at the University of Texas, Sarah and Ernest Butler School of Music in Austin, Texas, and has the David and Mary Winton Green Chair in String Performance and Pedagogy. He primarily teaches performance students and supervises his teaching assistant who works with the nonperformance majors from across the university on a weekly basis.

Early Instruction

The participants followed diverse methods of early instruction, which affected their educational experiences and present pedagogical philosophies. Clapp, Gilman, and Bargerstock began their violin studies in the public school system, which is considered to be a common approach in terms of structure and technical/musical expectations. Dalbec-Szczesniak, Huang, and Wolcott had nontraditional early educational experiences. Their instructors provided little guidance in terms of exact technical skills and encouraged their students to set themselves up in the most natural, comfortable manner. Christensen, Ngai,

Gillham, and Lewis followed the Suzuki method or philosophy of instruction in their early years of study and they all reported either the positive or negative experiences commonly associated with the Suzuki method. Some had well-educated instructors who understood the philosophical principles that Suzuki established. As a result, they flourished with the joy for music and gained valuable pedagogical knowledge. Others had instructors who did not fully grasp Suzuki's principles in their entirety, which according to the participants, resulted in technical/musical gaps in their playing.

Public School System: Common Approach

Both Bargerstock and Clapp began their violin studies at 9 years of age within the Pennsylvania and New Jersey public school systems. For two years, Bargerstock's early studies were comprised of solely group instruction, where lessons were staggered between upper and lower strings and the students did not see each other until the sixth grade. Clapp's first teacher was both a trumpet player and a high school band director in the public school system. He claimed that this music teacher did not have a strong string background and was "a matter of convenience." He added, "I was getting better, so nobody asked any questions." Both Clapp and Bargerstock recalled that they did not follow a specific methodology in their early stages of study because Suzuki did not establish his pedagogical philosophies in the United States until 1965. Their instructors used various instructional books and tunes, including Paul Herfurth's (2003) *A Tune a Day*. Both Bargerstock and Clapp stated that the support that they received at home and the parental involvement throughout their early studies affected their progress in positive ways. Although they began with what would be considered poor instruction in the early

stages, they had the talent to persevere through private lessons and met the high standards required to attend The Juilliard School.

In a similar fashion, Gilman began studying the violin at age 10 in the Indiana public school system. By contrast to Bargerstock and Clapp, Gilman stated that he had a "very fine teacher" in the early stages of study and his learning revolved around basic techniques of scales, technical studies, and repertoire from level one to advanced. According to Gilman, he had an extensive study of etudes, including Wohlfahrt (1905), Sevcik (1905), and Kreutzer (1963), long before his postsecondary education at The Eastman School. He experienced scaffolding in his learning, as skills were layered and enhanced.

Nontraditional Approach

Dalbec-Szczesniak and Wolcott began their studies at the age of 7 in Ontario and Nebraska with instructors who followed a nontraditional approach, while Huang began her violin studies with her mother in Taipei at 6 years of age. In Huang's early studies, she did not follow a particular method, but recalled going through the Suzuki repertoire. She stated that there were high expectations in her early lessons, although there was little emphasis on setup or technique. Similarly, Wolcott called himself the "typical quasi-Suzuki" kid, who unfortunately developed bad habits as a result of poor guidance in his early years of instruction. In his lessons, Wolcott recalled an emphasis on pitch and left hand posture, with little explanation about the bow, sound, or physical setup.

Dalbec-Szczesniak studied with a woman who was neither a professional musician, pedagogue, nor performer. Her initial teacher was completely self-taught, loved to teach, and instilled a love for music in all of her students. Dalbec-Szczesniak explained

how “she would do things like bring us all together on a weekend at her place. She had a pool, she would cook, and everybody would just play for hours and hours and hours and that’s how [we] learn[ed].” The social aspect involved in music making was a priority in Dalbec-Szczesniak’s early years of study, in addition to a positive learning environment and a joy for playing the violin.

Wolcott and Dalbec-Szczesniak claimed that their instructors gave them a lot of freedom in terms of setup and learning specific skills. Wolcott explained that his instructor “actually let me set myself. He told me to get my wrist back and things like that, but he never fixed my bow hold or the position of my violin, and so I felt like the position of my violin was very comfortable.” Similarly, Dalbec-Szczesniak stated that her instructor “didn’t give us too much information–just basically go with it.” In terms of setup and learning various skills, she stated:

> There was no emphasis on posture [or] tone of the bow. . . . We learned how to play chamber music from a very young age . . . really being self-reliant . . . so that we could be really independent and communicate with each other really, really well.

Dalbec-Szczesniak was encouraged to be independent and claimed that she had to figure out “whatever I could do to get the sound out.” Dalbec-Szczesniak, Wolcott, and Huang endured both a social and independent approach to learning, where they had to learn various skills through experimentations and interactions with other students.

Suzuki Instruction

Christensen referred to himself as a “Suzuki kid,” and began his early studies at the age of 5. He studied with a teacher who was a part of the first wave of Suzuki training

in the United States, which began with John D. Kendall at Southern Illinois University, in Edwardsville, Illinois. According to Christensen, at that time, there were many violin instructors who used the Suzuki name to gain large studios, although they did not fully understand the philosophy. Christensen believes there are two versions of Suzuki teachers: those who do not understand the philosophy or lack the appropriate skills, and those who understand the philosophy and follow the pedagogical methods to support it. Christensen stated that in his early lessons, the focus was solely on rote memorization, without an understanding of technique, posture, bow hold, or tone production. Although he was naturally gifted and succeeded in his studies, he believes that the deficiencies that he accumulated early on greatly hindered him throughout his education.

Similar to Christensen, Ngai began his Suzuki violin studies at the age of 4 and a half in British Columbia. At the time, he stated that his instructor was becoming familiar with the Suzuki method that was introduced in the United States and used the Suzuki repertoire. In his early lessons, the focus was mainly on what was needed at the given time, but Ngai recalled an emphasis on posture, learning repertoire, bow hold, and left hand position, with little emphasis on note reading. Ngai claimed that his "reading was poor," and that "[violin instructors] had not figured out that the Suzuki method was supposed to be working alongside what was already in the school systems." This paralleled the experiences of Christensen, who also lacked in his note reading skills as a result of poor Suzuki instruction. Brian Lewis has strong philosophical convictions regarding the misinterpretation of the Suzuki method in the United States. According to Lewis, young children in Japan learn how to read notes in kindergarten and have this knowledge when they begin their violin studies. Suzuki advocated memorization in his

lessons in order to focus on more details in the music. When observers came to Japan to learn Suzuki's philosophies, they witnessed students playing by memory and made the assumption that they did not learn how to read music. Lewis explained this misinterpretation of note reading:

> Kids learn how to do that in Japan in the Suzuki schools that they have. Preschool students learn how to do solfège and read music, so [that] by the time they go to kindergarten, they already know these skills. Unfortunately lots of people came and saw in Japan Suzuki not teaching the music, and made this really not correct assumption that he didn't teach that.

Many Suzuki instructors believe that rote learning was Suzuki's philosophical approach to teaching when, in fact, young preschool children in Japan acquire note-reading skills before their violin studies. The early educational experiences of Christensen and Ngai encapsulate this long-standing misinterpretation of the Suzuki philosophy.

Gillham endured mixed Suzuki experiences when he began his violin studies at the early age of 3 years old at the Guelph Suzuki School, in Guelph, Ontario. He referred to his instructor's pedagogical approach as "Suzuki plus" because she did not view the Suzuki approach as a method, but as a philosophy. Gillham recalled having all aspects of technique emphasized in his lessons, although he did not have an appropriate setup in the early stages. As a result, he required rehabilitation with his later instructors to make up for his self-proclaimed laziness as a child. Gillham stated that his first instructor, Daphne Hughes, "really taught me to love music and love the violin, which when you're 3 years old, that's kind of the first thing you need to learn." Although Gillham did not begin with

a strong technical foundation, he had a love for music instilled in him from the beginning stages of study.

Gillham, Ngai, and Christensen stated that although there were positive elements in their early Suzuki instruction, but there were obvious gaps that resulted in the need for remedial work in their later postsecondary studies. By contrast, Lewis experienced ideal Suzuki instruction in the early stages of learning. He began his violin studies at the age of 4 in Kansas with his mother, Alice Joy Lewis, Eleanor Allen, and Shinichi Suzuki. According to Lewis, his early instructors emphasized all facets of violin playing, including setup and tone production.

Pedagogical Influences

The 10 participants reported distinct pedagogical influences throughout their studies, which shaped their current approaches to teaching and learning. There are common pedagogical themes amongst the participants, including: effective practice methods, metacognition, love for music, technical approaches to the instrument, performance practices, communication, and psychological health. This highlights how the participants' present teaching practices are affected by their previous experiences, and how their pedagogical influences have evolved throughout their education and career.

Effective Practice Methods

Gilman, Huang, and Ngai believe that effective practice strategies create self-sufficient, analytical, and responsible learners. Ngai stated that his instructor, Sydney Humphries, promoted this type of independent learning in order to "create exercises if [I] happen[ed] to not have a Sevcik book or a Schradieck book . . . create exercises using certain practice methods to pinpoint areas that, for example in a particular passage, need

special attention." This metacognitive approach encouraged Ngai to analyze and solve his own problems through creative strategies. Both Gillham and Lewis were influenced by their instructors to use focused repetitions while practicing. Gillham reported that his teacher, Gwen Hoebig, was organized and methodical in her approach, and would simply give daily directions as to the specific tasks that needed to be practiced. Hoebig would say "'Alright, you're going to play this, and you're going to play this, and you're going to perform them in two weeks, and this is how you're going to do it!'" Hoebig's systematic approach to tasks left a lasting impression on Gillham's present teaching style. Lewis reported that his teacher, Suzuki, said to "practice only on the days you eat." This had a great impact on Lewis, as he "grew up learning . . . that food feeds our body and music feeds our soul:" that practicing was a necessary, integral function of everyday life. He further explained Suzuki's perspectives of practicing:

> I was assigned things to do thousands of times a day. I had a bow flexibility exercise that I was assigned to do 10,000 times, and I always thought that in America that was a figure of speech–it means we do it a lot. But no no no no no, he wanted me to do this exercise 10,000 times a day. So, that by the time I had left, I had over the course of that month or whatever before we went to a different assignment, I had done more than a quarter of a million of these exercises. And why? Because my teacher had asked. If he would have asked me to do it 10 times, I would have done it 10 times. But how long would that have taken me to adjust my bow hold to get the desired result? So this type of repetition was great. I did it with the bow. I did it with chopsticks. I did it with pencils. I didn't do it all the time with my bow, and that really helped to influence me a lot.

Suzuki's assignments of practicing a technique 10,000 times a day emphasized his philosophical belief that one must practice many focused repetitions in order for the body to have complete mastery of a skill. Due to these intense practicing expectations, Lewis now believes that "I know full well what I need to practice, when I need to practice, and how to practice."

In addition to Suzuki, DeLay equally influenced Lewis through her methodical approach to practicing. She encouraged her students to be "organized practicers," and devised a five-hour practice regime for her students to follow. Huang also stated that DeLay was methodical and logical in her philosophical approach to the violin, and that she "was the first teacher to have everything literally mapped out." Lewis explained DeLay's approach to practicing:

> [It] fit very well within my Suzuki training because I was taught that you had to divide up your practice. I was not one of those kids who got stuck on a passage. . . . I was taught that you work on it, put it away, and get it out the next day. Work on it, put it away. From the Suzuki method, I had had a lot of good training about how to think about what to practice, and how to be patient with myself during that process.

Through the pedagogical guidance of Suzuki and DeLay, Lewis understood how to formulate effective practice strategies, in addition to the length of time that he should spend on each task. Lewis (2013) now encourages his students to find their "magic number" for repetitions in order to achieve mastery of a skill in the practice room. For Lewis (2013) himself, 50 repetitions accurately in a row was his magic number. If he

achieved 48 repetitions successfully and then made an error in the passage, he started over again. With his students, he uses the following strategy in their lessons:

> I will sit there with my kids and say, "Let's do this 10 times" . . . [I] show them where the path is because it really is psychological. If somebody says, "Ok, go home and fix that." You have not given them any tools to do it, and they can either by some miracle fix it, or feel terrible that they can't do it, and then feel not so involved.

Lewis understands that students at every level of proficiency require guidance in learning the most effective practice strategies, and he equips them with tools for success. According to the participants, as students acquire practice strategies, they increase their metacognitive processes of decision making, problem solving, and becoming their own teachers in the practice room.

Metacognition

Clapp, Huang, and Lewis stated that they gained valuable knowledge from DeLay and Galamian that they now impart to their students. DeLay was one of the most influential violin instructors in recent history, as she had high standards, a positive approach to the instrument, and treated every student with the same care and sincere interest. According to Clapp, DeLay was his most influential teacher because she instilled in him the importance of asking questions. He could not remember a specific approach that DeLay had, but her students always left her studio being able to play the violin. He stated that Barbara Sand (2000), the writer of DeLay's biography, *Teaching Genius,* would sit in her studio and experience the following:

> She could not understand what the big deal was about Ms. DeLay. She didn't see much happening. But it was true that who came out of Ms. DeLay's studio [was] able to play the fiddle. Starting with Itzhak, and, of course, Itzhak had it before he came to her. The surprise with Itzhak was that Ms. DeLay said, "Well, what do you think this should sound like?" He had never been asked that question before. He had always been told what to do.

According to Clapp, DeLay encouraged her students to be independent, to engage in metacognition, and to ask questions in order to awaken their own thinking and problem solving. Clapp believed that he continued this legacy through his own teaching, and sought to "ask questions and get the student to make the discovery of what he or she wants to happen, and then talk about how [to] make that happen, using the two big expressive tools of pacing and dynamics." Clapp encouraged his students to think critically, ask questions, and make their own personal discoveries. Similarly, Galamian (1999) describes the responsibility of the teacher:

> One of the most important things that a teacher ought to teach his students is, therefore, the technique of good practice. He has to impress on his students that practice has to be a continuation of the lesson, that it is nothing but a process of self-instruction in which, in the absence of the teacher, the student has to act as the teacher's deputy, assigning himself definite tasks and supervising his own work. A teacher who limits himself to pointing out the mistakes and does not show the proper way to overcome them fails in the important mission of teaching the student how to work for himself. (p. 93)

One of the main goals that Galamian (1999) offset for his students was to make them self-sufficient. This philosophy can be traced back to the pedagogical strategies of Leopold Auer (1921, 2007), which influenced both DeLay and Clapp through the lineage.

Clapp encouraged this independent learning through a studio handbook that he gave to his students at the beginning of every school year. The handbook included Yost (1928) shifting exercises, various practice techniques, and strategies for how to prepare for recitals. Clapp stated that the handbook:

> Becomes the laboratory. . . . I just put [everything] down on paper so that if they have any thoughts or any questions when they are alone. And I tell them right at the beginning, you are becoming your own teacher so you have to be good! You have to be able to save yourself time and not waste time just by playing and playing and playing.

The handbook served as a foundational guideline for Clapp's students as they embarked on their own personal learning journeys. Clapp understood that every student would use the handbook in a different manner depending on their needs, but he hoped that they would at least critically think about the information and ask questions.

DeLay also influenced Huang through the implementation of sequential scaffolding strategies. This methodical learning process increased Huang's ability to analyze her own playing and understand how certain tasks are executed. She explained DeLay's influence:

> I did not really appreciate her way of teaching until I was older, until I got my university job. I realized how helpful she really was. . . . At this university, [the students] have a lot of potential, but they weren't really trained at a very high

> level prior to coming here. And somehow being very methodical really helps–breaking everything down–just explaining how the bow works and the bow pressure, how it ties to the rhythm. It just really helps them.

DeLay's logical process of "making the steps" to reach specific goals is an invaluable practice and teaching tool that Huang incorporates on a daily basis to encourage metacognition**.** Similarly, Sand (2000) describes the strategies of DeLay:

> [She insisted that students] become their own magnifying glasses, able to identify problems and begin to deal with them independently. In my conversations with current and former students, the phrase 'She taught me how to teach myself' came up time and again. (p. 98)

DeLay's focus on independent learning and metacognition also influenced Lewis' approach to reading and understanding a score. Her students were required to know all of the parts of the orchestra, and she often asked students to sing specific solo parts (e.g., the oboe part in a particular section of a violin concerto). Lewis stated that when asked to sing a specific orchestral part:

> You better be able to sing who you're playing a duet with. . . . She taught us not to be one-line players, [but] to think contextually, and to think about the harmony, and to think about who you are playing with. And then, of course, you know the score. You know when you need to play with a bigger, more robust sound here, or where to play softly, where to take time, where to not take time. What are special things that you find in the music? That's what separates great artists–what they find in the music.

As an instructor, Lewis now requires his students to purchase full scores for the pieces that they are studying to encourage self-discovery, musical creativity, and analysis.

Through the pedagogical influences of DeLay and Galamian, the participants acquired meaningful knowledge in terms of metacognitive analysis, musical interpretation, breaking tasks down through scaffolding strategies, and asking questions. The participants have incorporated their instructors' metacognitive strategies with their students throughout their teaching careers.

Love for the Instrument

Lewis, Christensen, Gillham, and Dalbec-Szczesniak attributed their love of music to their early instructors and vividly recalled their instructors' enthusiasm in their lessons. Lewis explained Suzuki's positive attitude, stating, "I loved my lessons with him. He was joyful, he was joyous." Lewis stated that Suzuki did not focus on "whether kids went on to become professional musicians and go to Indiana or Juilliard. He was interested in making fine human beings. That's really what he wanted to do, and thought that music [was] a great resource for that." At 5 years of age, Lewis learned that "tone has a living soul without form," and that the sound he made through his violin was alive.

Through the pedagogical influences of Mary Cay Neal and Timothy Eddy, Christensen is mindful of his attitude in not becoming obsessed with setting kids up perfectly, making sure they play in tune all the time, and ensuring that their bows are always straight. This is important to Christensen, but he believes that kids have to connect to the joy of playing the instrument. He stated that Neal:

> [Always] said it should be fun, and nothing is more fun than playing well. It is fun to be able to take a piece, look at it, and read it, and play it in tune . . . and

> read duets and read quartets–that's fun! That should direct our technical desires rather than, "You must do this, you must do this, you must do this, you must do this." No–you must do this because doing it well is enjoyable, and that is how we are able to tell a story. That is how we are able to connect to the audience.

Through Neal's influence, Christensen views teaching as a means to bring students to a point where playing the violin is enjoyable. While studying at Stony Brook University, Christensen battled confidence issues, mental blockages, and performance anxiety. The psychological struggles that he experienced had ties to his early studies and the habits that he accumulated. Fortunately, Eddy brought his priorities back in line with reality and reminded him that:

> When you get on stage, if what is in your head is, "Am I going to make that shift? That was out of tune. My bow hold sucks." If that is the dialogue going on in your head while you are on stage, that will be transmitted to the audience, and that is what they are going to hear.

According to Christensen, Eddy's honesty helped him realize that if he did not love playing the violin, his insecurity would be inadvertently transmitted to the audience. Through Christensen's experience, he understands that a love for the instrument is crucial at any stage in a student's development. Some of the participants are still affected by the experiences that they had as students, and they are mindful of the responsibility that they now have as violin instructors to instil a love for the instrument.

Technical Approaches to the Instrument

Due to diverse educational backgrounds and teaching experiences, the participants have subjective priorities in terms of learning, teaching, and practicing various skills.

Clapp was influenced by the pedagogical methodologies of DeLay and Galamian: DeLay instilled the importance of a positive attitude, "high technical standards, and to some extent musical involvement," and Galamian advocated an individualized approach to pedagogy with every student. Clapp explained:

> Mr. Galamian, whom I also studied with, said, "I don't teach music, I teach the violin." He was definitely technical–said little about musical shaping–but he, surprisingly enough, was one of my influential teachers because he encouraged me. You really don't hear much along those lines about Mr. Galamian who was thought of as a severe taskmaster. Ms. DeLay said [that] . . . his greatest talent was getting people to practice because they were scared of him.

Clapp claimed that he received positive encouragement from Galamian, although Galamian had a harsh reputation and kept an emotional distance from his students. In a similar fashion, Bargerstock claimed that with Galamian, "You had to cover the entire lesson in 59 minutes and you had to be warmed up before the door opened." Although both Galamian and DeLay had specific expectations and standards for their students, they had different approaches in terms of execution.

In addition to DeLay and Galamian, Suzuki has impacted the field of violin pedagogy. Lewis stated that it has been interesting to grow up in the Suzuki movement and witness the misunderstandings that have evolved regarding the Suzuki method of teaching. Lewis made a parallel between the Suzuki note-reading misunderstanding and DeLay, stating that they both believed, "The lesson begins when the piece is memorized." Both DeLay and Suzuki believed that when pieces are not memorized, the students are

limited to focus only on technical concepts. Once freed from the page, they can then work on more in-depth musical details and artistic expression.

In addition to memorization, both Suzuki and DeLay advocated repertoire development, repertoire polish, and repertoire review with their students. With DeLay, before a piece could be "passed," students had to complete six basic things, including: the correct notes, fingerings, bowings, rhythms, intonation, and memory, in that order. Lewis stated that DeLay had a chart for every student, where she would indicate the successful aspects exhibited in the weekly lessons. She also required her students to study works multiple times and continually encouraged repertoire polishing. Lewis recalled playing the Mendelssohn *Violin Concerto* for DeLay before going on tour. He had previously performed the concerto six or eight times with orchestra and felt that he did not need to play it for her again. She informed Lewis that once he performed the piece 50 times, he would begin to know it. This statement impacted Lewis' perception of repertoire polish and review. Along with repertoire review, both Suzuki and DeLay believed that etude study was equally necessary. DeLay's students began with Kreutzer (1963) No. 2 and No. 43, as "Kreutzer was a cornerstone." Lewis believes that through the process of intense etude study, he developed abilities and not just techniques, through personal self-discovery. Through the influences of Suzuki and DeLay, Lewis views repertoire as a constantly alive entity and etude study as a way to master technical skills. Lewis added:

> Ms. DeLay really tried to take judgment out of things for us, that there wasn't a bad this or a bad that. Suzuki was that way. Suzuki said that we actually do not correct things, we learn how to do things in a new way, and I love that philosophy. DeLay was that way too. One of my favourite things–and Suzuki,

> too–was how you can fix many things by fixing one thing, and not needing to necessarily spell it out. . . . Definitely these schools of philosophy, and schools of thought, and schools of technique have greatly influenced me.

DeLay and Suzuki influenced Lewis' nonjudgmental approach to the instrument and his ability to communicate change in ways that affect many facets of technique. Although DeLay called everyone "sugarplum," and took a sincere interest in every student's life, she had high technical/musical standards and demanded excellence, which Lewis has carried into his teaching practices.

Dalbec-Szczesniak attributes her present pedagogical philosophies to the influences of Syoko Aki, while studying at Yale. She stated the following about Aki:

> Syoko gave me confidence in areas that I had before not felt very secure about . . . getting around the instrument. . . . She gave me a real good security on the fingerboard I would say, which is a big part of my teaching today.

Dalbec-Szczesniak believes that Aki nurtured a sense of confidence and security with the instrument that she now strives to instil in all of her students. In addition, Aki was influential in terms of silently pitching notes in one's head and measuring the fingerboard. Dalbec-Szczesniak explained:

> She used to do this exercise with us where she would write a note on a staff way up in the ledger lines and you had to stand up and play it without any sound–you just had to go for it . . . measure your fingerboard with the tips of your fingers and find this note out of nowhere.

According to Aki, the fingerboard should be measured for muscle memory, control, and security. This pedagogical strategy changed Dalbec-Sczcesniak's perspective of the fingerboard and still affects her present teaching.

Similarly, Wolcott had influential teachers throughout his education who provided a true understanding of violin technique/musicality. According to Wolcott, Wilfred Biel was a "cerebral teacher," and Eugene Fodor "was a master. Whenever you are around someone like that, you can learn so much just by watching them." Fodor became an integral part of Wolcott's personal life, beyond their weekly violin lessons. Although Wolcott had to make quite a few changes with his bowing technique throughout his studies, Fodor and Biel affected his perspective of tone production, control of the bow, and contact point. As a result of these influences, Wolcott advocates an understanding of bow control in the first lessons with his students. He believes that when this knowledge is addressed in the early stages of learning, it increases the potential to execute more advanced techniques in future studies. The participants have been influenced by their educational experiences and studies with various instructors. These experiences combine through experimentation and patient self-discovery, to become personal approaches to technique/musicality.

Performance Practices

In addition to subjective technical/musical approaches to the instrument, some of the participants claimed to have been influenced by the performance practice knowledge of their prior instructors. While Gillham believes that Moshe Hammer showed him how to communicate convincingly on the instrument, David Stewart challenged his musical decisions and the traditional performance practices of the past. Stewart was adamant

about following the exact directions of the composer written in the score and ensured that his students did not duplicate previous interpretations of works. This has influenced Gillham's level of artistic freedom that he allows himself and his students to explore.

Both Christensen and Ngai stated that their Baroque violin studies influenced their performance practice knowledge. Through his studies with Stanley Ritchie, Christensen learned how both styles influence each other, contradict each other, and how to deal with the discrepancies. He believes that Ritchie has a profound ability to verbalize his Baroque knowledge to students who are classified as "modern players" in the following way:

> Most of his job is dealing with hardcore performance majors from a conservatory background and trying to get them to understand Baroque technique in a way that he can do something with them, that doesn't contradict what they are doing in the studio.

Through Ritchie's influence, Christensen strives to enhance his students' modern technique/musicality by incorporating Baroque performance practice knowledge. Ngai attributed his Baroque studies with Marilyn McDonald as being holistic and "full circle:" extending from his early studies with Sydney Humphries. He was encouraged to view the violin as an extension of what he was doing physically as opposed to something that was attached to his body, which has become a guiding principle behind his teaching.

In addition, Huang, Ngai, Dalbec-Szczesniak, and Bargerstock attributed their present understanding of tone production and musical interpretation to their former instructors. Ngai believes that his studies with the two violinists from the Emerson Quartet (who were former students of Oscar Shumsky) impacted his Franco-Belgian

approach to the bow where [one] "pull[s] the sound . . . really coax[es] the instrument to sing." This approach influences his pedagogical practices, in being sensitive to the bow stick, the bow hair, and the vibrations of the instrument. Similarly, Dalbec-Szczesniak stated that there are certain musical interpretations of pieces that she worked on with Lorand Fenyves, "like Beethoven Sonatas, the *Spring*, Beethoven *Violin Concerto*, Brahms, Mozart–I still have his sound in my head." These musical interpretations continually affect her present teaching. Throughout Bargerstock's studies with Jascha Brodksy, she learned the importance of artistic details and the patience required to create the most satisfying musical interpretations, as he "dissect[ed] everything to a really infinitesimal level." Some participants acquired performance practice knowledge throughout their prior studies and their own artistic endeavours. Others accumulated performance knowledge while studying different genres of music, which informed their modern interpretations of style.

Communication and Psychological Health

In the early stages of learning, Christensen, Clapp, and Lewis were influenced by their instructors' use of words, psychological approach to teaching, and investment in their lives. According to Christensen, he did not fully understand how to play the violin until he went to university. His first serious teacher, Oswald Lehnert, could execute technical skills with ease, but lacked the ability to effectively verbalize physiological information to his students. This experience influenced Christensen's approach to teaching, as he strives to verbalize information in different ways for every individual student. Along with his emphasis on effective communication, Christensen is adamant about finding the balance between technique and a love for playing the violin. He

believes that it is a constant balancing act of remembering that "it is beautiful, it is art, and it should be enjoyable." Clapp had a similar experience in his early studies, which impacted his teaching practices. His instructor tried to fix his left hand position, but did not know how to communicate her intentions. Clapp stated, "I can remember leaving lessons crying because she was so insistent that I change [my] left hand position, but she did not know how to make it happen. . . . She had the goal in mind but she didn't know how to get there." Through these personal experiences, effective communication and the psychological wellbeing of students were priorities to Clapp and still inspire Christensen.

Through the influences of Suzuki and DeLay, Lewis strives to make lasting, positive impressions in the lives of his students. He takes the responsibility of teaching seriously and he is committed to his profession. He claimed:

> It's going to make me cry to think about the power that we have as teachers and sometimes the blasé attitude that people take about this type of psychological damage or help that they can give. I think that really great teachers manage to educate kids not just on how to play the violin, but how to be real human beings, how to deal with life. Violin teaches life to me . . . teaches great life skills.

The personal interaction, commitment, and joy that Lewis experienced in his studies with DeLay and Suzuki, have become fond memories that he shares with his students. Lewis stated that they were more than violin teachers: they humanized his learning experiences and made a lasting impact in his life. Lewis added, "I find that the teachers that are truly the most successful are the people who connect with their students on a personal level, and those students really feel like that teacher is involved with them." According to

Lewis, DeLay was adamant about "making the steps" in their professional lives, their personal lives, and their violinistic lives.

Lewis had a special relationship with DeLay outside of the music studio, where they would often meet for dinner, talk about pedagogy, and Lewis would ask for professional and personal advice. Lewis further elaborated, using a specific example. He stated that after he graduated and had been teaching at the Hartt School of Music, at the University of Hartford, he asked DeLay for some advice regarding a student who was working on her vibrato. He told DeLay that he was feeling impatient with her lack of progress and asked how she managed to remain patient with him throughout his studies, as they worked on his vibrato for six years. She explained to him that she knew that it would become a priority when it became important to him. This statement has influenced Lewis' assessment strategies with students throughout his teaching career, in addition to the ways in which he communicates information. Lewis explained, "We only change things on the violin that are of importance to us personally. That answer has been a guiding force about how long to stay on something, when to put it away, and when to get it back out." Lewis believes that it is the responsibility of the teacher to show students why something is important and when something has changed in their playing. Every success and moment of self-discovery should be celebrated. Through their personal educational experiences, Christensen, Clapp, and Lewis believe that effective communication in terms of learning styles and encouragement through sincere personal interest can influence students in positive ways.

Pedagogical Lineage

Inspiration Through Tradition

The concept of genealogy is important to many of the participants because it informs and supports their artistic and technical decisions. They strive to instil this interest in their students, in order for them to gain an understanding of historical context and carry on the legacies of performance practices and traditions. Lewis claimed that he "always has two distinct schools of thought in [his] body at all times:" the Suzuki philosophy that all children can learn and the Galamian Franco-Belgian legacy through his studies with DeLay. He stated that it has been fascinating to read Joseph Joachim's (1897) treatise on teaching and learn that the Suzuki school is part of the Franco-Belgian school of Joachim. Neumann (1969) and Fischer (1997) both agree that over the years, it has become increasingly difficult to identify the national schools because they are all influenced by each other in various ways. In a similar fashion, Fischer (1997) describes the material in his pedagogical resource, *Basics*:

> Many of the exercises in this collection have been used widely for decades, and in some cases for centuries. Their exact origin is difficult to trace because they have been so widely practiced. . . . The first of these was a tone production exercise that I learned form Dorothy DeLay. Before sending the article to the magazine, I telephoned Miss DeLay in New York to ask her permission, explaining that I did not want to "steal" her exercise. She laughed and said: "Don't worry. I learned it from Galamian, and he learned it from Capet, so feel free–what is important is that these exercises become known!" (p. vii)

Many years prior to Fisher, Leopold Auer (1921) parallels this perspective on authorship when he states that his pedagogical philosophies were formulated out of years of experience, experimentation, and observation. Similarly, Lewis believes that instructors formulate their diverse pedagogical approaches to the instrument, in addition to rehabilitative strategies, through their education and experiences. For example, Lewis uses specific string crossing exercises with all of his students that he claimed were part of his training from Eugène Ysaÿe:

> [It is] fascinating to see how these things get passed down from different sources. I think it is very important for our students to know the history of where they come from, because what's so wonderful about playing the violin is the tradition with which we have: to see how it has been used in the past, how it is used now, and where you come from–what schools of philosophy.

In an abstract manner, Lewis considers Suzuki to be his musical father, and both Suzuki and DeLay as musical grandparents to his students. Lewis encourages his students to read both philosophical and method books on teaching so that they understand the reasons why they are going through various learning processes, and how to pass the information on to their students in the future. Lewis also requires all of his students to write program notes for their recitals. In doing so, they have to make historical connections with the past and make the information a living part of what they are doing.

Lewis also strives to preserve his pedagogical lineage by posting pictures of famous violinists and inspirational quotes on the walls of his studio, which he rotates on a regular basis. He has pictures of Suzuki and DeLay posted on the walls, and shares

personal stories about them in order to keep their legacies alive. He explained that although all of his students know who DeLay was:

> They never knew her. They don't know that she would run hours behind, or that I had lessons that started at midnight and ended at 2:30am and we would go out for pints of ice cream after lessons. All of this stuff I think it is important to share with our students.

In addition to pictures, Lewis believes that inspirational quotes that are readily accessible stimulate philosophical thinking. For example, one of his favourite quotes of Aristotle: "We are what we repeatedly do. Excellence then is not an act but a habit." Lewis believes that violin instructors have the responsibility to train excellence:

> I believe that we can train our students to do a lot of things. It's not that you are born with it, and if you can't do it, you can't do it. That used to be the philosophy. If you couldn't do up-bow staccato, then you just had a bad up-bow staccato. That's one of the reasons why Ms. DeLay got into teaching. She refused to think that one person could just do it better and nobody else could do it.

Lewis has a holistic pedagogical approach and encourages his students to think, analyze, and make connections to history through their own playing.

Gillham, Gilman, and Bargerstock are also a part of strong pedagogical traditions, and their lineage has become increasingly important to them over the years. Gillham stated, "There isn't a day that goes by when I teach that I don't think back to all of them at some point." Gillham traced his lineage all the way back to Viotti, stating:

> If I go back in a chronological order, Martin Beaver was a student of Gingold, who was a student of Ysaÿe. He was also a student of Victor Danchenko who was

> a student of Oistrakh. So if you go down the Ysaÿe lineage and the Oistrakh lineage, it takes you pretty far back. With Franco Gulli at Indiana, his teacher studied with Sevcik, so you can go down the Sevcik path, but he also studied with Szigeti, so you can go down that path. Moshe Hammer was with Jascha Heifetz, so there is the Auer lineage as well. David Zafer, and David Stewart, and Gwen Hoebig, there is Oscar Shumsky and Ivan Galamian and Sally Thomas. So I think I am about six degrees of separation away from pretty much all of the schools. I am a bit of a mutt–a little bit.

Gillham is aware of the schools from which his knowledge originates and how he amalgamates his personal pedagogical methodologies from the various lineages. Throughout Gilman's studies at the Eastman School of Music, Zeitlin often remarked in his lessons how he had a direct link to Brahms and his contemporaries when he played Romantic music. According to Gilman, this sense of responsibility increased his standard of analyzing his own playing. In a similar fashion, Bargerstock claimed that her previous instructors influenced her present pedagogy, stating:

> Well it's a cumulative effect, isn't it? . . . How did they affect me? Overwhelmingly. They made me who I am today. I don't know how better to answer that, but we are a composite of everybody that we have ever worked with.

Bargerstock appreciates the knowledge, effort, expertise, and musicianship that she received from all of her violin instructors, as they influenced her progress in different ways and presently affect her approach to teaching. Lewis, Gillham, Gilman, and Bargerstock have all been affected by the pedagogical legacies that came before them, and they carry a sense of responsibility in preserving the traditions of the past.

Learning Through Self-Discovery

By contrast, some of the participants view their pedagogical lineage in humble, more unconscious ways. Clapp, Ngai, Dalbec-Szczesniak, and Wolcott do not see themselves as carrying on specific pedagogical legacies. Dalbec-Szczesniak believes that knowledge dissemination has changed over the years, and stated the following:

> Nowadays it's harder and harder to say because we are exposed to so many influences because of technology and the ability to travel. . . . Some people will say, "Oh, you sound just like Fenyves. You have an old world sort of sound," but I find that a little presumptuous.

Wolcott echoed Dalbec-Szczesniak's modest perspective of pedagogical legacy. Although his instructors studied with Galamian, Gingold, DeLay, Heiftez, Szigeti, Milstein, and Grumiaux, he asked, "Who am I to dare tread on that path? I try my best, and humbly try to follow what I can."

Both Huang and Christensen share common beliefs regarding their Galamian pedagogical lineage. Although Huang esteems the Galamian philosophy of "no real format and no real prescription," she believes that her self-discoveries and personal victories in overcoming difficulties have had an even greater impact on her approach to pedagogy. Christensen stated that early on in his teaching career, he felt the pressure of carrying on a certain legacy. Over the years, he believes that by making many mistakes, his pedagogical philosophies have become more of a synthesis. He further explained:

> There is a real danger in feeling like you are carrying the torch for a specific genealogy or lineage, as you put it. We all owe tremendous debt to our early teachers, but if you find yourself really just quoting chapter and verse all the time,

> it is not really an organic approach. . . . If you are not studying with that teacher anymore, then you start to kind of ossify, and you are no longer learning yourself. And if you are not open to change and development, you are short-changing yourself as a performer and as a musician . . . you are also short-changing your students because it becomes dogma rather than theory and principle.

Christensen believes that although there are strong pedagogical traditions that produce wonderful violin players, traditions that are intently preserved often become exaggerated without any room for modifications or new discoveries. He stated that when violin teachers believe that how they learned the instrument is the only way, "this is dangerous . . . because [they] miss out on the joy of being wrong and the discovery that comes after that." Christensen stated that in his teaching career, working with other colleagues and playing chamber music have allowed him to continue developing as a violinist. Although Christensen believes that a pedagogical lineage informs musical decisions, it should not dominate every philosophical approach.

Pedagogical genealogy can be viewed as a means to carry on a certain legacy or as a reference in making informed artistic decisions. The participants have varied opinions in terms of the importance of lineage and how they see themselves woven into the tapestry of carrying on various pedagogical traditions.

Rehabilitation: Semantics

Rehabilitation, remedial work, and corrective pedagogy carry specific connotations through their semantics. Although the meaning behind the terms encapsulates technical/musical issues, the participants had distinct opinions about how to label the action involved in this pedagogical strategy. While some of the participants

referred to the corrective methodologies as “rehabilitative,” others used “remedial.” Zweig uses the term “rehabilitation” in casual settings and as a topic of study in her pedagogy classes. When discussing rehabilitation in a formal manner, she stated that she prefers to use “establishing a healthy foundation,” as it has a positive connotation (Zweig, 2008).

Lewis also has distinct views towards remedial pedagogy and often refers to it as “enhancement therapy.” He stated that the concept of rehabilitation brings up the question of what postsecondary violin instructors expect of their first-year students. He asked the following question:

> I would consider that a little bit rehabilitative, or are we enhancing? That is the question. What do we expect? I think the ultimate question is what are we expecting our kids to know and to be able to do before they get to college?

Lewis believes that the varied terms are discrepancies in semantics and that the approaches to correction can be viewed as rehabilitation or enhancement. In a similar fashion, when discussing the issue of rehabilitation, Clapp preferred the term “continued development” because of its positive connotation. He stated that the term rehabilitation:

> Implies disaster from before and the need for total remake of technique and approach to the instrument, which I think could make people who are the object of that term feel a little bit insecure if they knew that they were being rehabilitated.

Clapp believed that this approach to rehabilitation implied that the learning process is ongoing and that students continually need to reevaluate their playing. Although the

participants agreed on the necessity of remedial pedagogy, they had diverse perspectives regarding the psychological effects of the semantics behind the terms.

Remedial Experiences of the Participants: Personal Technical Challenges

The participants had varying degrees of rehabilitative experiences throughout their education. Technical rehabilitation was often required because of inappropriate early instruction and the accumulation of bad habits that were reinforced over time. The various rehabilitative experiences that the participants endured help them connect with their students' remedial challenges.

Some of the participants claimed that the majority of their remedial work involved enhancing their prior technical skills. Through recollection, Ngai believes that he engaged in rehabilitative work throughout his studies, but was not sure if it was rehabilitative or developmental. He claimed that he did not reach all of the technical/musical goals that his instructors had for him while in university, but that the information eventually made sense to him. He stated that "one of the greatest things that my teachers had, all of them, was faith–faith in me" and that one day, he would be able to unlock the "one piece of the puzzle" that was missing. Similarly, Dalbec-Szczesniak experienced some aspects of rehabilitation throughout her studies, but explained how the process was much more about enhancing what she already had. Upon further contemplation, Dalbec-Szczesniak recalled various technical issues that were addressed by her instructors in her early postsecondary studies. In her first year of study, Fenyves introduced her to the Alexander Technique (Alexander, 1932), which was growing in popularity in Toronto at the time. She claimed:

> That was true rehabilitation because I had been holding quite a lot of tension in my jaw and neck and shoulders, and it affects everything down the line. It became obvious to me that everything I knew could only be as good as my posture was.

In addition to postural changes with Fenyves, Dalbec-Szczesniak endured some rehabilitative work with Aki regarding her bow hold and shifting technique. She stated that the concept of the shifting finger "was a revelation to me. I thought it was something random. I didn't realize there was a way to do this without risk." The shifting techniques that Dalbec-Szczesniak learned through Aki are still a main aspect of her present pedagogy.

Although Galamian's pedagogical legacy has endured throughout history and will continue into the future, Clapp had a negative experience while studying with Galamian. According to Clapp, Galamian changed his bow hold, which resulted in physiological discomfort and tension. He explained:

> I had to change my bow grip from Mr. Galamian. . . . His deal was third finger over the pearl dot at the frog–all the way down there–and first finger in the saddle between the first two knuckles, and bent thumb. That, to me, ended up tightening up my whole arm. So I suppose my bow grip most closely resembles Dounis, through George Neikrug. I had two lessons with Neikrug and he changed my grip completely. It took me half a year to figure it out.

Although Galamian has a reputation of being one of the most renowned pedagogues in history, his bow technique was physiologically uncomfortable for Clapp. Similarly, Wolcott struggled with changes his instructors attempted to make in terms of his posture and setup. According to Wolcott, Biel insisted on rehabilitating his posture, position of

the violin, bow arm, and the use of a shoulder rest, when his technique was natural and comfortable. He explained the effects of this experience:

> When I went to a teacher later that was able to fix many things, some of it didn't need to be fixed . . . and instead it was fixed unnecessarily and so it became this sort of quagmire complex. Some things were better and some things got worse.

As a result of his experiences, Wolcott is sensitive to the physiology of his students and their level of comfort with the instrument.

Throughout Gilman's postsecondary studies, he sought to achieve greater left hand facility and shifting technique with Zeitlin and DeLay. Through his experiences, he understands the difficulties that arise when attempting to change techniques that have been reinforced for many years. He emphasizes to his students that "this is not an overnight thing, and you will find yourself going many times unconsciously back to what you had . . . that's why you have to stop and examine frequently through listening." Gilman often tells his students about his experiences with remedial work, in order to encourage them and relate to their potential insecurities. Similarly to Gilman, Huang shares her shifting rehabilitation with her students to connect with them on a personal level and reveal her technical discoveries.

Both Huang and Gillham endured rehabilitation throughout their preuniversity education, which affected their progress in postsecondary studies. As a result of Huang's exposure to extensive demonstrations in her lessons, she now advocates modeling and internalization in her current teaching practices. Gillham explained his experience, stating:

> I didn't have a strong setup until David Zafer ripped me apart and then built me back up again. . . . I was pretty messed up, but he was able to fix that rather quickly. I think that was his real strong gift.

Gillham was in his early teens when he endured intense rehabilitation with Zafer. He was able to look beyond the immediate physical discomfort of the process and stated that his remedial experience:

> Was actually rather inspiring. He taught me how to hold the bow, and he taught me how to play open strings, and how to set up my left hand. He did it in such a way that I went home and practiced these various exercises: Dounis (1921), Flesch (1970), Bytovetski (1917, 1921), and I would see myself improve, and that inspired me to continue working. I really got hooked on learning how to play the violin.

As a teen, Gillham had a healthy psychological approach to his own learning. He had the time and the confidence to endure the remedial process in a methodical, patient manner without any external pressures.

The participants had varied technical rehabilitative experiences based on the level of their early instruction and the guidance that they received throughout their studies. Some referred to the process as enhancement of what they already had, while others had to relearn various technical skills. Although the premise behind rehabilitation is to address technical/musical skills, the psychological challenges are often far more debilitating than the physical challenges.

Remedial Experiences of the Participants: Personal Psychological Challenges

As the participants endured the physical discomfort of technical rehabilitation, many claimed that the psychological challenges that accompanied the physiological changes were much more difficult to bear. Many stated that they felt a sense of frustration, discouragement, and low self-esteem, as they compared themselves to their peers. Others stated that the psychological struggles were debilitating, to the extreme of quitting school, or acquiring performance anxiety.

Initially, Dalbec-Szczesniak stated that she did not try to dwell on the difficulties in correcting her posture, but upon further contemplation she added, "Introducing the Alexander technique was probably the hardest thing I had to cope with because that was a major shift in my approach to the violin, and that was pretty traumatic." Huang stated that there were obvious gaps in her technique when she moved to the United States from Taipei, and that she endured extensive remedial work throughout her studies at Peabody Preparatory. She explained her experience, stating:

> I think it is more of an emotional challenge than a physical challenge because you feel literally like you don't know how to play the violin anymore. . . . Even if you are just changing one little angle of your finger or hand position, you feel so different. And especially if you were, let's say, really good with the left hand and then suddenly you have to adjust the thumb position, it really feels like you have no idea how to play in tune anymore. But I think that the trick is to really trust that your teacher knows what they are doing. Once you put that trust there, you still face those challenges, but mainly you will start to feel better. What I did, was I just practiced a lot. I would repeat, repeat, repeat a lot. . . . My first performance

> while going through the rehabilitation was just really awful. It just didn't sound good [and] it didn't feel good.

Although Huang's discomfort with the instrument was psychologically daunting and affected her performance, she stated that she always maintained trust in her instructor.

Christensen claimed that in his early years of study, the fundamental information about being successful on the instrument was kept from him. Christensen faced tremendous frustration when he reached a certain level in his studies and realized that he was not playing well enough, as a result of inappropriate early technical training. When he began his postsecondary studies, Elaine Richey implemented remedial pedagogy to address his technical issues. He stated:

> On the one hand it was exciting because I was finally getting the information that I felt like I needed in order to play well. On the other hand, it was incredibly frustrating and hard on an 18-year-old ego to essentially realize, "Wow, I can't play" . . . so there were some struggles with that.

Along with his diminishing self-efficacy, Christensen also went through a period of anger, frustration, and a sense of betrayal wondering why he did not receive the appropriate information when he wanted it the most. Christensen's remedial experiences were then carried into his graduate studies at Stony Brook University. He explained his emotional obsessions as he began his studies with Eddy:

> I became so obsessed with my technical deficiencies and my problems with intonation, I went from being a natural player who was very, very musical–my performance was organic, and it was connected, and it was emotionally involved and artistically committed–and I went to being incredibly technical and unable to

play, because I was trying to fix all these problems–so I became obsessed with that.

Through Christensen's studies with Eddy, he was able to realign his priorities and feel connected to the instrument once again. As a result of Christensen's experiences, he now understands that all instructors have varied access to correct information, approaches, limitations, and perspectives.

In a similar fashion to Christensen, Wolcott believes that he required more psychological rehabilitation than his teachers were able to provide for him. He needed psychological guidance in order to overcome the emotional issues that he accumulated throughout the physical rehabilitation: "Everything was technical or physical. No one unfortunately tried to rehabilitate me psychologically." When he began his studies at the Cleveland Institute of Music (CIM), the level of artistry intimidated him, because, "Everybody sounded like Perlman." He was terrified at the notion of having to play in studio class where, in his opinion, "they just throw you out to the wolves." Although he had gained the technical prowess, he lost his confidence as an artist, became obsessed with his technical shortcomings, and endured debilitating performance anxiety.

During Wolcott's studies at CIM, he read James Loehr's (1982) book, *Mental Toughness Training for Sports*, which helped him overcome his performance anxiety and changed his life. Wolcott claimed that many postsecondary institutions are becoming aware of the need for psychological attention and have hired sports psychologists to aid in this regard. According to Wolcott, as students go through the physical changes, the psychological rehabilitation required to overcome fear and performance anxiety is

critical. Clapp (2012) also addresses the effects of performance anxiety in his studio handbook:

> Confidence resulting from technical and memory security is the factor that minimizes anxiety. When performing, body tightness always increases over your practice room level, jeopardizing accuracy, so get rid of tightness early in your work. Going into a performance with a list of things to remember at certain places increases tightness and kills confidence and musical freedom. Through practicing repetitions, work those spots into automatic tension-free muscle memory. Focus on enjoying and communicating the music, filling your mind with positive thoughts. (p. 4)

In his studio handbook, Clapp documented the importance of mindful practicing and the need for technical security.

Although Lewis endured appropriate early instruction, he claimed that Suzuki worked intensely on loosening up his "claw" bow hold, and DeLay worked methodically on his posture and vibrato for six years. He explained his experience with DeLay:

> The first semester of every year for six years of my Bachelors and Masters degree, we would get out vibrato and work on widths and speeds. . . . I was depressed my first week at Juilliard. I had a big old honking vibrato and I [was] looking at all these people with these nice little refined vibratos–and it was different.

Lewis claimed that he had a psychological crisis as he constantly compared his technique to his peers, and believed that they judged his inadequacies. Lewis also endured other emotionally negative experiences throughout his studies that affected his present

approach to pedagogy. Lewis shared one example, when he was literally kicked by a world-famous violinist in a master class at the Aspen Festival because he did not like Lewis' posture. He claimed, "I had a footprint on my suit." This teacher also made him take off his jacket and flex his muscles in front of 100 people in the audience to see if he was strong enough to play the violin. Lewis stated that instead of developing psychological blockages from these experiences, he made the decision to advocate a positive approach to the instrument.

Many of the participants claimed that the psychological repercussions of rehabilitative pedagogy were more difficult to endure than the physical changes. These experiences have shaped their present approaches to remedial work, where the emotional wellbeing of students is a top priority.

Aspects of Playing in First-Year Performance Students Requiring Rehabilitation

Percentage of Students Requiring Rehabilitation

The participants have subjective remedial assessment strategies and concepts that they address with their first-year performance students. The percentages of students requiring remedial work varied between institutions considered to be highly reputable, versus smaller schools in North America. Clapp, former violin instructor at The Juilliard School, claimed that only 50% of his first-year students required remedial work. By contrast, Christensen, Wolcott, and Bargerstock believe that 100% of their students require rehabilitative work. Gilman claimed, in a similar manner, that 99% of his students require remedial work. Dalbec-Szczesniak stated that 95% of her first-year students are in need of rehabilitation, and that she rarely has students requiring little to no correction at all. According to Huang, 90% of her first-year students are in need of remedial work. She

has some students who require very little correction if they endured rigorous, well-rounded training when they were young.

Both Ngai and Gillham did not provide exact percentages, but claimed that the need for rehabilitation varies from year to year, depending on the students. Gillham believes that all students need some degree of rehabilitation or "tweaking," and encourages his students to constantly reexamine how they play the instrument. He often brings students back to the basics, knowing that he has four years to build their technique back up. Other students may have a beautiful setup and simply need to reexamine how to draw a straight bow, or work on the intricacies of the martelé or detaché stroke. Although Lewis stated that he addresses certain issues with all of his students regardless of their level of proficiency, he added that it could be viewed as enhancement more so than rehabilitative work.

The participants who teach at smaller institutions claimed to have higher percentages of students requiring rehabilitation, while the participants who teach at more prestigious institutions with rigorous technical/musical standards claimed to have students who require less. In addition, some participants believe that all students require enhancement at any stage of artistic proficiency.

Technical and Musical Aspects of Playing Requiring Rehabilitation

The participants have personal priorities when addressing technical and musical proficiencies. Posture and the bow arm are the most deficient in first-year students, although there are varied opinions within those broad categories.

Body Awareness

Through Christensen's experience with the Alexander Technique, he believes that every success and issue in violin playing stems from posture. Alexander Technique "is a form of body work which seeks to educate its pupils to use their bodies more efficiently in everyday movement . . . [and] develop more precise awareness of their bodily use" (Tarr, 2010, p. 4). Christensen explained that it is "finding a position of mechanical advantage for everything that we do . . . how do we set up our bodies so that what we want to do is done in the most efficient, most relaxed, and most productive way." Hellebrandt (1974) examines this issue of posture:

> Clutching the bow stiffens the whole bowing arm. Gripping the neck of the violin immobilizes the left hand. Supporting the violin with the left shoulder limits the mobility of the whole left arm. It is virtually impossible to imagine how a young student with a fluid postural balance, proper head poise, correct violin hold, and good proximal (shoulder) joint control could encounter serious learning difficulties when attempting to execute the discrete and specific technical skills of violin playing. (p. 12)

Hellebrandt (1974) believes that if young students have correct positions in the early stages of study, the threat of future rehabilitation is low. Lewis addresses body awareness with every student, regardless of their level of proficiency. He stated the following observation:

> Fifty years ago, people didn't really talk about relaxation–not the way we do now. I'm sure people obviously talked about not being tense, and things like that, but I

> find it very interesting to look and see what was taught then versus people now: doing Pilates, yoga, and all the stuff that helps build core strength.

Lewis often brings in physical therapists to talk about these issues with his students, and believes that the effort in using every available resource positively affects their success as violinists. Both Gillham and Bargerstock first explore various shoulder rests and chinrests before addressing more pressing body awareness issues. Posture affects every part of the body in violin playing, including the bow arm and left hand, and technique should be viewed in a holistic manner as opposed to isolated parts (Polnauer, 1952).

Bow Arm

The majority of the participants believe that bowing issues are the most obvious deficiencies with their first-year students. Gilman stated that this includes bow holds, knowledge of articulations, knowledge of specific bow strokes and when to use them, and the use of bow speed and pressure, which affect musical interpretations. Similarly, Huang believes that most issues with first-year students are found in the bow arm, through excessive tension. She stated that students make tasks more difficult than they actually are, and "if you remind them it's really just detaché and martelé and go back to reviewing very simple warm-ups with the bow, oftentimes they are reminded that it is actually much more simple than they think." Through the pedagogical influences of DeLay, Huang reminds her students of the basic principles of violin playing and breaks tasks down into manageable steps. Huang also believes that deficiencies cause a "trickling effect" into all aspects of playing, and explained the following concept:

> Let's say there is a problem with the bow, but then there are always problems beyond that. They have trouble counting with the divisions, which relates to the

> bow–bow use, the bow distribution. In a way it could be the rehabilitation of the rhythm or to retrain the thinking of the rhythm, but then to also put it together with the bow or with the left hand. It is a new process for them.

Huang believes that the relearning that takes place through the remedial process affects every aspect of playing in a different way. When one aspect is altered, it impacts the whole process of executing tasks, as both hands try to work together. Alexander (1932) states the following regarding the relationship between the two hands:

> The unity of the human organism is indivisible. . . . The parts of the human organism are knit so closely into a unity that any attempt to make a fundamental change in the working of a part is bound to alter the use and adjustment of the whole. (p. 45)

Through remedial pedagogy, the brain has to process new ways of accomplishing tasks, in relation to the muscle memory of executing other tasks.

Ngai believes that the deficiencies in his first-year students' bow arms stem from the exaggerated fascination with left hand technique as students progress. With his first-year students, Ngai listens for a consistent sounding point, regardless of whether the bow is completely straight all of the time. Although that may be ideal, he stated, "It might not be the case for everyone." When students are young, they often play with bows that are too long for them and "fishtail" as they approach the tip. As a result, they lose the sounding point and may carry this deficiency into their advanced studies. In a similar fashion, Bargerstock believes that the most pressing issues involve the bow arm, the bow hold, and stiff fingers. She explained:

> I would say the hardest is the bow arm. There's a saying that you learn [the fingerboard] in six years, eight years . . . and then you spend the rest of your life learning the bow. . . . They come in with stiff fingers on the bow hand–they need their springs developed. Wouldn't it be great if they could all go through Mimi Zweig's precollege program? . . . But they aren't–not the ones who come to me.

Like Bargerstock, Gillham encourages his students to have loose fingers and the lightest bow hold possible with the feeling of their arm hanging. He stated that it is difficult to tell students to relax their fingers on the bow, because they go to the extreme and "all of a sudden their fingers become like overcooked spaghetti and everything is coming from the fingers." He strives to address these common issues with all of his first-year students in a methodical manner, while maintaining a nonjudgmental environment.

Dalbec-Szczesniak, Lewis, and Wolcott address bowing issues in terms of tone production and how to use the sound as a means to communicate. Dalbec-Szczesniak stated that "posture affects everything, so it usually has to be the first thing we talk about–but bow hold is your sound, and that's all you've got." Lewis works on tone production and bow holds with all of his first-year students, regardless of their level of proficiency. He encourages his students to sink into the string, utilize the weight of the bow arm, and listen to the ring of the violin by "constantly [preaching] . . . that our voice is the sound we make on our violin. That is our artistic voice–it is the mechanism by which we communicate." Wolcott believes that his Galamian and DeLay influences have impacted his attention to bow details and sound production. With regards to his students' former instructors, he claimed, "Nobody teaches them anything about the bow. It's horrible."

Shifting

In addition to posture and the bow arm, Clapp believed that the deficiencies in his first-year students were most apparent in shifting and the release of tension. He claimed:

> Most of them press all the way through the shift . . . and they do it with a lot of power. They usually get it because they won the audition. [But] as time goes by–and learning new music–they save a lot of time if they develop a habit of releasing the finger before the shift.

With shifting technique, Clapp expanded upon the consistent foundation that his first-year students already had and encouraged musical subtleties. Rolland (1974b) states that when shifting, a common fault of students is to "press the fingers excessively during shifts, as if pressing the accelerator and the brakes of a car simultaneously" (p. 181), and without "preparation, the shift is usually jerky and abrupt" (p. 38). As a result, the pressing of the fingers causes tension and affects the timing of the shift, where they become as Clapp described, a "light switch" or "sling shot" shift.

Similarly to Clapp, Gillham and Ngai find deficiencies in their first-year students' shifting technique. Gillham, like Clapp, believes that students often lack the technique to release the finger before the shift. Ngai believes that shifting is related to bowing, in that both arms strive to work together:

> Mr. Humphries always taught me that of all the problems that you might have with your left hand, the majority of them can be fixed with the bow. If you have a good sense of tone, if you have a really open sound, then the left hand is going to feel freer. But if the right hand feels tight, then the left hand will definitely feel tight. It just works that way. There's no disconnecting the two–they are so related.

> They are so connected that you have to focus on the bow hand and the bow arm and your tone and your sounding point and your contact to fix a shift. If it isn't fixed when you do those things, then, of course, it's a process of elimination.

If the problem is in the left hand, Ngai is methodical in his process of elimination to find the source of the issue. He systematically goes through each part of the body on the left side to ensure that, for example, the elbow is free, the guide note is established, the finger pressure is light, and the thumb is releasing. He then goes through a series of exercises with the left hand and the bow, to practice sliding up and down the fingerboard. These exercises loosen up the left arm with big motions and then slowly confine the distance to the actual shift. Ngai believes that the bow arm and shifting issues cause the most deficiencies in his students and views them as one entity that can be addressed together.

Left Hand

Gilman, Gillham, and Clapp believe that left hand facility and organization are often deficient in first-year students. Gilman believes that the most frequent deficiency that he notices in first-year students is a lack of left hand facility, and usually by the admission of the student. He stated that "students will say, 'Well I just don't get around as fast as a lot of people do,' and this is usually based on a lack of knowledgeable practice of exercises and scale studies." Through his own experiences, Gilman advocates etude practice to increase left hand facility. Clapp stated that his students often needed to gain a clear understanding of how their left hand functioned on the instrument. With his first-year students, he explained the use of the three motors (e.g., elbow, wrist, and shoulder), and the function of each:

> The shoulder is involved almost from the beginning, but the elbow is responsible for first to third, and maybe first to fourth, and then the wrist takes over–and all of that explanation. It's not reminding them of something they knew. As a matter of fact, most of my Masters students who come to Juilliard have never thought about how they get the fingers where they are going. I say this is not a ladder that your fingers are climbing; they are carried where they go.

Clapp ensured that his students understood the physiological intricacies involved in playing the violin, as this information provided a foundation for understanding basic technique. When the basic principles are understood, the students then have the freedom to expand upon them through musical interpretation.

The participants have personal priorities in terms of technical/musical deficiencies, although there are many similarities within the broad categories. Posture and the bow arm are the most common issues, with shifting, and left hand efficiency and facility as additional challenges faced by the participants with their first-year postsecondary performance students.

Reasons Why Rehabilitation is Often Required in First-Year Performance Students

The participants have their own subjective views as to the reasons why their first-year students require remedial work or enhancement therapy. There are differing perspectives in terms of the deficiencies being established at the outset of instruction through inadequate communication or teaching, or acquired through bad habits as a result of: a rigid pedagogical approach, physical discomfort with the instrument, laziness, age, or a lack of parental support.

Inadequate Instruction and Communication

The quality of instruction in the early stages of study impacts the development and progress of students (Brenner, 2010a; Zweig, 2008). Auer (1921) states that students need to be trained in all facets of musicianship, and that progress is predominantly affected by appropriate guidance and self-observation. Although this is essential, Auer (1921) claims that "the great majority of violin students . . . may be said to be quite uneducated, violinistically speaking" (p. xx). Bargerstock echoed these sentiments, stating, "There is a lot of poor instruction out there," and expanded upon her opinion:

> [It is] a big struggle. I am teaching at a state university. . . . We don't have necessarily a very high economic bracket of students coming through, and many of them have not had teachers that were necessarily well-schooled, if I could just put it that way. So they will miss a few things, if they themselves know.

Bargerstock addressed the perceived poor level of preuniversity instruction in Boone, North Carolina, the shortcomings that many of her students face growing up in a rural economic bracket, and how the isolated location of the university causes "better" students to attend other schools.

In a similar fashion, Clapp and Ngai believe that the technical/musical deficiencies of their first-year students were established at the outset of instruction where their instructors did not address the bad habits. Clapp stated, "I think right away. . . . I don't think that you are restoring anything that did exist. I think that you are starting with a malady and taking it to the next step." He claimed that some students require rehabilitation while others may not because "nobody told them," or their previous instructors did not successfully relay certain information to them. Oftentimes, Ngai

believes that "instructions are well intentioned but perhaps misleading, or they are misinterpreted" by students. Certain students have an image of what they want and have the patience, self-awareness, and sensitivity to absorb the instructions. Others may be quick to learn certain skills, but may be missing two percent of the entire concept, which could be a crucial element of the whole picture. Ngai further explained this issue:

> Sometimes those things develop as just little mannerisms and sometimes they just unfortunately are elements of bad technique that they need to rectify–so I don't think any teacher is trying to teach poorly. I think sometimes the instruction is not necessarily as well informed as it could be, or there's a misinterpretation on the part of the student, or it could be a host of things.

Ngai advocates scaffolding, patience, and awareness in his pedagogical approach so that his students are able to master and internalize certain skills.

Lewis believes that all of the setup that instructors do with young children is imperative for future success with the violin. He claimed that the basics have to be understood, or else remedial pedagogy is much more difficult to execute when students reach postsecondary instruction. Lewis stated, "I am a strong believer in not making everybody to be a carbon copy of what I am and how I play," but instead looks for what works well with every student. Once students reach the postsecondary level, Lewis assesses "the things that are going to help them get to the next level of their performance, the next level of their technique, [and] the next level of their musicianship." Lewis believes that postsecondary education is the time to assess what has been addressed and not been addressed in the student's prior education. He also understands the psychological damage that many students already have when they enter into

postsecondary studies because "they are just not set up well. They do not have mastery of skills or ownership of skills. They have understanding of skills, but they do not have mastery of skills." He believes that the ways in which students are taught in their preuniversity studies affect how they react to situations in their postsecondary studies. If students experience a negative environment where their teachers "tear them down," he believes that it is "psychologically and technically damaging because nothing is mastered." As an instructor, Lewis strives for a mastery of skills that can be integrated into the student's thinking, playing, and music making.

In a similar fashion to Lewis, Gillham believes that the early stages of study are crucial, and many of the technical/musical deficiencies are established at the outset of instruction. Gillham (2010) states on his website that the brain is the largest muscle, and that deficiencies arise when students do not have mental control over physical movements. During the interview, Gillham expanded upon his beliefs:

> I'm not going to be quick to blame it on the teachers. A lot of times, teachers are giving the right information, but if the students don't take that information, it's not going to happen. That being said, when you are 3 or 4 years old, there are certain things you can do–like Mimi, for instance. Mimi can basically take any kid and set them up and have them playing in a month, but I think that has more to do with her psychological approach to the student than anything.

Gillham believes that in the early stages of study, the instructor's responsibility is to present the information in such a way that the student is able to implement it effectively in their own way. He elaborated, "I think that teachers at that level who are successful have a way of communicating differently to every student, based on the student's needs"

in a way that they can digest the information quickly. Similarly, Christensen experiences "incomplete dissemination of information" with his first-year performance students:

> For whatever reason, the student didn't get the whole picture, so they have blockages, they have postural problems, they have positional problems, [and] they have cognitive problems in terms of, "What is it that I'm listening for? How do I figure out how to play in tune?" For whatever reason, they don't have the whole story, and that responsibility is shared–always. It's not one person's fault. It's not completely the student's fault, it's not completely their teachers fault–it's just that's the reality. They don't have the whole story.

Christensen is nonjudgmental of his students' prior instructors and strives to be emotionally detached from their issues. He takes into consideration that students could have been emotionally blocked as children, or exposed to ineffective vocabulary or pedagogical methodologies.

Lewis also claimed that some students require remedial work more than others because of access to information. Lewis believes that this access has become more feasible over the years through technology and exposure to knowledge at summer music festivals. He also takes into consideration that his students are classified as "millennials," and that their present world is constantly changing. According to Lewis, students no longer have to patiently rummage through piles of records or CDs at the music stores to find their favourite violinists, as YouTube and Spotify have become the most efficient means to find recordings and videos. Although this is a reality for his students, Lewis still believes that ear training and ear development are imperative, and claimed the following observation:

> The people with the most ability are the people with the fastest ears, not the fastest fingers, because you can teach people how to do that. . . . If you can hear something, then you can change it, and if you can change something, then you can progress.

Lewis encourages his students to think and listen critically to recordings and challenge the musical decisions of, for example, Heifetz or Oistrakh. He stated, "The only wrong decision in my studio is no decision." He believes that listening develops the ear, which then leads to critical analysis of issues that may need to be changed.

Rigid Pedagogical Approach

Gilman believes that young students often develop bad habits when their teachers do not effectively convince them to change, or when their teachers are too rigid in their approach to the instrument. He stated, "I'm not a big believer in telling the student that they have to change anything. You have to come from the other direction." Gilman first determines whether a student requires rehabilitation right away, or whether he needs to establish a greater emotional connection. According to Gilman, this is dependent on the thoroughness of their early training and the degree to which habits are present.

Wolcott claimed that both the psychological and technical issues of students affect the need for rehabilitation. There are instructors who are rigid in their approach and insist that students have, for example, the violin at a particular angle or have a particular shoulder rest. In his opinion, these instructors "want it their systematic way instead of really thinking about what is going to help the student be the best player they can be." This describes his personal experiences with Biel, who took his natural position and tried to make it like his own. Wolcott became rigid in his approach to the instrument, as he

tried to mimic Biel's postural intentions. Wolcott claimed that these habits were difficult to reverse because they were ingrained in his muscle memory.

Lack of Body Awareness and Discomfort

According to Ngai, students require remedial work because they are often impatient with their progress and want to progress through the repertoire quickly. He explained, "You don't ride your bike with one pedal. You've got to have all of the equipment there in place." Ngai claimed that young students enjoy playing pieces with flashy, dazzling passages of technical virtuosity, although they may not have the facility to execute the technical skills. As a result, they develop bad habits, and these deficiencies affect their future progress.

As students become increasingly impatient, Ngai often finds that they become less consciously aware of their bodies. He claimed that as children grow, their setup needs to change in order to compensate for their increased height, arm length, and finger length. Ngai stated that teenagers' bodies change in such a short period of time. There is an adjustment that needs to happen, because "[they've] changed, [they've] evolved, [they've] grown, and [their] approach has to change as well." If this is not taken into consideration, students may develop bad habits as they try to force their bodies to do something that it can no longer do efficiently in that certain setup. In Ngai's opinion, students who do not require rehabilitative work are rare. He believes that these students have instructors who are:

> Aware of their setup and their physical approach to the instrument–basically they have been guided by a shepherd correctly all throughout their precollege years, so that when they get to college studies, the sky is the limit in a way.

According to Ngai, most students require remedial work, and the amount of rehabilitation depends on the bracket and level of the students.

In a similar fashion, Huang believes that deficiencies are established at the outset of instruction, because violin playing is uncomfortable for young children. She explained the concept of finding comfort with the instrument in the early stages of learning:

> When [I] first learn[ed] the instrument, I really had . . . bad habits. . . . I remember [that] playing [the] violin wasn't the most comfortable thing. Even though I sounded pretty nice, initially, it didn't feel very comfortable. So I think when kids don't feel comfortable, they start to form some bad habits to compensate for comfort . . . violin is just a difficult instrument. Holding the instrument itself is difficult, and with every child, they have a different way to find comfort. And so some ways are more proper and some ways will eventually become a bad habit if no one corrects it.

Huang believes that students who do not discover a natural position in the early stages of learning could potentially develop bad habits, as they compensate for the discomfort. Bargerstock also claimed that rehabilitation is often required for students because of discomfort with the instrument and "body type . . . some students are more relaxed and looser, and some are just hardened off somehow–it's nature." According to Bargerstock, the violin may not be the best instrument for them.

Laziness and Lack of Will to Change

Gillham believes that students require rehabilitation because of poor practice habits, a lack of will or desire to change, and poor listening. Gillham stated the following

about his experiences implementing rehabilitation with students who had various physical and psychological blockages:

> I would put that definitely before poor instruction. I have seen students who have certain issues who have come and played for me–and they have studied with three or four great teachers–and oftentimes they just don't listen. . . . You keep telling them, "Relax your thumb, curve your pinky, don't lock your elbow," and then they go and play for Pinchas Zukerman in a master class who says the same thing. Sometimes it just takes someone else in a different situation to say it, for the light bulb to go on in their head, and I think that's just part of learning.

Gillham believes that it is the responsibility of the student to listen and be open to correction when they are young. Similarly, Dalbec-Szczesniak claimed that students often know the correct information, but do not implement it as a result of laziness or unsuccessful dissemination of information from the instructor. She further explained this contradiction:

> I'll ask them, "Show me how you were taught to hold the bow," and they will show me something completely different from what they are currently doing–first-year students typically. I want them to realize that perhaps they know what I'm going to say . . . and that they have become a little lax in their approach. I find that some come in and they are already quite well set up and aware of all of that, but some have just lost touch, and some haven't been instructed well. Usually you can see this because they will show you a bow hold that is completely off the charts, and you realize that's all they know.

Dalbec-Szczesniak understands that although some students may not receive appropriate instruction in their preuniversity studies, she is hesitant to place the full blame on the instructor. She stated that some students receive all of the correct information, but have not made the choice to implement it or make it a part of their playing.

Age of the Student

Both Lewis and Christensen believe that the age in which students begin their studies affects their future progress. Lewis explained:

> If kids started when they were 4, then they have had 14 years of lessons before they get to college . . . and so a lot of those kids tend to feel comfortable with their bodies and their techniques to a certain level.

Lewis stated that there is an "internalization factor" present in students who have had many years of lessons, compared to students who began when they were 10, 11, or even 12. The students "have really internalized and actually can produce what they have been asked, because they have mastered things in a very logical, one step at a time type of process" in their early instruction. Lewis addressed the difficulties that students often face when they begin their studies at an older age:

> You don't have to start exactly when you are 4, but I find that there are more tension issues with kids because they have great head knowledge but not the ability to take that and to actually see it come to fruition to a positive step on the violin. That can be very, very frustrating for students. . . . I tend to do more rehabilitative work with kids that started "later" and have not been able to internalize.

For postsecondary students, this is the difference between having 14 years of study before university, or only 6 years of study. Christensen also believes that the need for rehabilitation could stem from circumstances that arise when students begin their violin studies at a young age:

> Maybe it's a kid who had really good training and started really young. Maybe they knew it when they were 4, and they knew how to do it when they were 4, and then it became so organic that they didn't know it anymore, and then eventually [they] reach a technical or a cognitive point where things starts to break down again and then [they] have to relearn it. Ok, sometimes that happens. Most of the time, it's because nobody ever bothered to teach it.

Christensen believes that young students often have to relearn the semantics and mechanics behind concepts that are correctly hardwired in their muscle memory. Suzuki (1983) understood this developmental principle and encouraged modeling and imitation in the early stages of development.

Inadequate Parental Support

Huang believes that when children are supported in an appropriate environment and have teachers who stress correct setup and ear training, they require less rehabilitation in the future. In the literature, Auer (1921) states that students need to have a keen ear, a good sense of rhythm, and a certain physiological structure in order to play the violin well. Huang explained the importance of students having a well-rounded education:

> It's many aspects of training–it is not just one aspect: ear training, dictation, [and] rhythmic training. To play violin well, you need to have a good sense of all of

> these aspects. If they have all of these aspects supported when they were younger, I would think that they would need a lot less rehabilitation when they get older. . . . I recall when I was younger, my mother would be present when I practiced most of the time, and she had a lot of knowledge in terms of intonation and rhythm. So she would always correct me, and so naturally when I got older, those were the things that didn't need to be rehabilitated. . . . She would keep a very watchful eye when I was practicing. That kind of support is very important for kids.

In the early stages of instruction, Huang described the need for nurturing well-rounded musicians who are exposed to various types of musical and technical training. She believes that children who engage in ear training exercises and rhythmic dictation develop a technical foundation, where other advanced skills can be layered. Auer (1921) claims that the acquisition of beautiful, pure tone results from appropriate instruction in the early stages and that parental support is a strong indicator of a student's future success in music. He advocates slow practice to develop ear training and states that apathy in practicing leads to detrimental habits (Auer, 1921).

Similarly to Huang, Wolcott claimed that the success of students is affected by the nature of the environment and the parental support at home. Wolcott believes that rehabilitation is often required for students who, when they were young, did not have the desire to play the instrument and lacked structured parenting. In those situations, the information presented to the students may be appropriate, but they are not supported in such a way to reinforce the skills on a regular basis. Wolcott also believes that genetics could be a factor, where students with long fingers or long arms are able to "get away

with more and not be negatively affected." In addition to genetics, stubbornness or a lack of listening to the intentions of the instructor could also be factors. In Wolcott's opinion, "the stars have to be aligned" for the perfect scenario of a great teacher, great ears, genetics, and parental support.

The participants believe that there are many factors that contribute to the need for rehabilitation with their first-year performance students. Some of the factors include: inadequate instruction, poor communication, the age of the student at the outset of instruction, incomplete dissemination of information, rigid approach to pedagogy, laziness on the part of the student and instructor, physiological differences, and level of parental support. All of the participants have their own subjective perspectives in terms of the need for remedial work, how to address correction, and the means by which to make this assessment in the first lessons.

Pedagogical, Physiological, and Psychological Strategies in Rehabilitation

Assessment Strategies

With regards to rehabilitative pedagogy, the participants implement individualized assessment strategies with their first-year performance students. Some instructors are straightforward in their approach to the issues that need to be corrected, as the deficiencies are often apparent. Others are sensitive to the psychological health of their students and address correction in an abstract manner.

Systematic approach of listening and observing. Both Clapp and Lewis have a systematic, literal approach when assessing the need for rehabilitation with their first-year students, while maintaining a positive studio environment. Lewis stated that he has a

specific checklist in his mind that he follows, and looks at the skills that he would like to enhance. He explained his assessment strategy:

> I first look at a student and find what is stopping that student from being the most successful violinist they can be. . . . I assess people on a number of different levels . . . I make an assessment of sound . . . I make an assessment of how they use the bow . . . I assess what is going on in their left hand . . . so frame of the hand and shifting . . . left hand, right hand, posture, position, balance . . . we are taking care of those things before we get into the concept of specific skills, like vibrato [and] shifting.

With first-year students, Lewis begins with a skill assessment, a musical assessment, and a repertoire assessment. He ensures that students complete entire concerti before moving on, and often starts with the third movement and works backwards in order to maintain their interest. Lewis keeps a notebook of all assignments, and continually checks to make sure that the students are following through, week after week. Rolland (1974b) parallels the perspectives of Lewis in terms of sequential development, repertoire/technique review, and the influences of Suzuki:

> Another important aspect of progress is the regular review of repertoire and techniques previously studied. This aspect is also often neglected, in spite of its virtues so well demonstrated by Suzuki. Only in frequent repetition and review can we establish reliable motor responses, which are essential to good playing. It is particularly important that only those actions and motion habits, which are basically sound be reviewed frequently in order to habituate them. On the other

> hand, faulty movements and uncoordinated actions should be censored rather than exercised over and over again, causing deeper penetration of faults. (p. 179)

Rolland (1974b), like Lewis, respects the pedagogical philosophies of Suzuki, through his insistence on repertoire review and refinement. Through repertoire review, students reinforce remedial tasks and developmental tasks at the same time, in order to increase awareness of every movement, sound, and prior habit (Rolland, 1974b).

In addition to skill, musical, and repertoire assessments, Lewis also makes timeline assessments to determine how long he will work on a specific skill or task with a student. He often finds that when he observes other teachers, this type of assessment is lacking. He spoke of a personal teaching experience to explain this concept:

> I have a student right now [and] we are working on vibrato–she is an undergraduate. We worked on it last year and then we put it away because . . . I realized it wasn't going to be on my time schedule, it is on the student's time schedule. . . . I was so glad that I didn't push her to go to that "one more level" of vibrato. She needed to live for six months doing what she had, and then [when] we got it back out . . . she really has mastery of skills, and not [just] understanding of skills.

Lewis believes that timeline assessments are imperative for instructors, in order to assess how long a student will remain motivated and how far to push them developmentally. DeLay influenced Lewis in this regard with their study of vibrato for six years. She instilled in Lewis an understanding that students only make changes when issues become important to them.

Christensen, Ngai, Bargerstock, Dalbec-Szczesniak, and Huang follow a similar assessment strategy like that of Lewis, where they determine through listening and observation which issues prevent their first-year students from reaching their full potential. Bargerstock stated that "it's in their sound, or lack of sound. It's in their discomfort, in their inability to shift freely. . . . [It's in] their inability to play for long periods of time without getting tied up in knots." Dalbec-Szczesniak stated that this initial assessment indicates which issue she will address first. She explained, "You can't do it all in the first day. You really do have to take it step by step and give them a bit of information each time." With an assessment of sound, Huang and Ngai believe that a forced quality in the tone indicates tension and that students often need to be reminded of the basic detaché and martelé strokes. Huang utilizes Kreutzer (1963) No. 2 to illustrate this point, as every student can tailor their focus to address specific technical issues using the extensive list of bowing options.

Gillham begins with body awareness and posture in the initial lessons with all of his first-year students. Regardless of their issues or need for rehabilitation, he first begins by opening up the student's mind to their own body and making them aware of different sensations. For example, he encourages them to talk to their shoulders and elbows, in order to examine possible tension:

> If they have the ability to become aware of their bodies and relax their shoulders on their own, just by communicating with it, then I think that those are the students who are going to be most receptive to dealing with other changes.

Body awareness is a priority in Gillham's initial assessment of first-year students. He addresses basic posture before putting the students on open strings or teaching them the

proper bow hold. Focused listening and observations are effective assessment strategies that the participants use to determine the deficiencies in their first-year students.

Sensitive approach dependent on the psychological health of students. Wolcott and Gilman assess the deficiencies of their first-year students in a sensitive manner. Wolcott believes that some technical/musical issues can be solved through a simple conversation. Instead of focusing on the technical deficiencies of the student, he focuses on their psychological wellbeing:

> If they look horrible or sound horrible, then obviously something needs to go on. Also, it can be as much as a conversation. I try to be as sensitive as I can. I think because of my psychological things with performing, I think that I am pretty sensitive to that–and I think having gone through so many teachers and so much technical discovery and uncovering, I have a pretty good eye for it . . . I try my best.

Wolcott uses his past personal struggles to connect with his students and ensures that they maintain their psychological health throughout the assessment process. In a similar fashion, Gilman believes that the psychology of the student is a priority and ensures that he does not force change upon his students. In order to assess the need for rehabilitation, Gilman asks his first-year students to play a familiar piece at their first lesson, so that the habits are obvious. He uses this strategy because the student knows the piece well, has most likely performed it, and will not think about apparent deficiencies. Gilman explained the following strategy that he implements with new students:

> If I feel like the student is emotionally and psychologically stable, then I can mention some points, but I'm very careful when I do that to say, "Here are some

> things that I observed that I would like to work on with you" . . . and then I'm very careful also at the end of that first lesson to say, "Does this sound like a direction you would like to go?"

Gilman is cautious of the way he communicates the need for rehabilitation with his students and does not force his suggestions upon them. According to Gilman, students must take ownership of their progress and decide to go in a specific direction, where he will then guide them.

The participants have personal assessment strategies that determine how they address remedial work with first-year students. In the first lessons, some of the participants observe and listen to the deficiencies in the students' playing before they begin the rehabilitation. Others focus on maintaining the psychological wellbeing of the students and sensitively address concerns through conservations.

Pedagogical Approaches to Rehabilitation

The participants have diverse pedagogical approaches to remedial work, based on their educational and teaching experiences. Some of the participants stated that they base their rehabilitative methodologies solely on the individual needs of their students, while others follow specific pedagogical steps or repertoire/etude sequences.

Individual needs of the student. According to Lewis, his entire pedagogical philosophy can be summed up in a simple statement: "Teach the student, not the subject." He does not have a specific prescription that he follows because he identifies the needs of each individual student. He stated, "I want us to have lots of freedom and the ability to look at a student and affect change in a positive way." According to Lewis, some students have specific techniques already mastered and do not require going through various steps,

while others do. Lewis' priority in the first lessons with postsecondary students is to make them aware of how they stand and how they balance their bodies. He added, "I love the word balance . . . how to balance your life, how to balance your bow, how to balance the violin. It [has] such great connotations." In the initial lessons, he assesses the technical hindrances that they may have accumulated in their prior education, in addition to the ways in which he can affect the most artistic development. He stated the following regarding the importance of technique and musical freedom:

> Technique frees us to be able to become better musicians. Some people think it is the end goal [but] it's not. That's actually the starting point. Playing in tune with all the right fingers–all that good stuff–allows you then to have the tools with which to make musical decisions, and that's really what I am looking for from all of the kids. So from lesson one, we are also always, always focusing on the music, always . . . so that the technique that they have does not spring forth as something separate from the concept of how to make music, but something that is actually essential to the support of great musicianship.

Lewis begins with posture because it creates the foundation that he can then build upon with more advanced skills, musical artistry, and freedom with the instrument.

In addition, Lewis strives to establish an emotional connection with his students. As this relationship develops, he is then able to assess their learning styles, technical/musical hindrances, and potential for artistry. He stated:

> That's what I love about teaching. How do you connect to a kid? Every kid is different, and that's what I love about it. . . . It would be so boring if we all played the same way, if we all did everything the exact same way. So I really work on

> principles with them– principles in action . . . so that they really have this mastery of skills. That is why this type of rehabilitative pedagogy is so important because by helping to adjust, correct, or fix whatever we are doing to fix that issue will allow them to go farther, faster.

Lewis ensures that his students have clear goals and that they manage their time well. Lewis added, "I find that with [first-year students], the rehabilitation is often time usage– how to develop time management skills." Through Lewis' strategy of "principles in action," he focuses on one task in the right hand and one task in the left hand, in order to increase the mastery of skills. When students push through the repertoire without gaining the appropriate mastery of skills, therein lies the problem in acquiring deficiencies. This is similar to the experiences and beliefs of Ngai. Lewis claimed, "If you have not practiced tenths, you are not going to be successful at the Bruch *Violin Concerto* with the last movement." Lewis views rehabilitation or enhancement therapy as a means to increase the individual potential in every student.

Through this perspective of "principles in action," Lewis also encourages his students to engage in metacognitive analysis. Lewis' students are required to verbally explain to him the technical concepts addressed in every Kreutzer (1963) etude that they study. He asked the following question:

> Why are we doing any of this kind of rehabilitative therapy or rehabilitative pedagogy? We are really enhancing their knowledge. So it is an opportunity–even though you may be changing something–you are also enhancing their ability to know how to be in charge of that issue. It's not always us making the change.

According to Lewis, as students become their own teacher, they are able to self-actualize their progress and persevere to the next level in their development. He added, "I am not looking for perfection in students. I am looking for people who I can work with . . . that we have a good working environment." When engaging in rehabilitative work, Lewis is aware of the psychological blockages that students may have acquired throughout their prior studies. For example, some students develop negative psychological associations with repertoire. In order to combat this issue, Lewis carefully selects remedial repertoire that is not duplicated within the studio at a given time. Through this strategy, students take ownership of their progress without the pressures of comparing themselves to their peers.

Through the influences of Neal and Eddy, Christensen strives to maintain the joy of playing music with his first-year students. He stated that many teachers use a "one size fits all" approach to teaching, where no matter how well the students play, they all go through the same rehabilitative process of starting over. Christensen stated that partially because of the population that he serves, starting students from the beginning would cause them to either quit or hate the violin by the end of the first semester. He explained:

> I can't take every student who comes in and make them leave the first lesson with a sense that they can't play the violin and start over from scratch. In a way it is easier if we could do that–to just sort of start over again, and fix everything, and don't let them play anything but long bows and the first three Schradieck (1928) exercises for three weeks. It works, but it kills the love. Except for in the case of really, really motivated students, it kills their love for the instrument, and their sense of confidence, and their sense of joy.

Christensen has specific steps that he takes when rehabilitating bow holds, vibrato, and posture, and then beyond that, his approach is individualized in order to maintain a love for the instrument. Christensen (2012) outlines his pedagogical philosophy on his website by stating the following:

> In private lessons I believe that unflinching attention to precise technique is the best, most efficient path to true musicality and expression. . . . The goal at any level is to attain a degree of technical mastery that allows the student's artistic and musical ideas to be expressed easily and fluently, and transmitted clearly to the audience.

Christensen (2012) has a flexible, creative approach in order to attend to the individual needs of his students. Similarly, Wolcott has acquired creative pedagogical strategies to coincide with his individualized approach to etudes and repertoire. A jazz pianist inspired Wolcott through this simple word of advice: "The more you listen [to great music], the more motivated you are going to be." Wolcott assigns YouTube listening lists to all of his students to encourage critical listening and installed a turntable in his studio for his young students to internalize the superior sound quality of recordings and experience sheer fascination. This strategy of critical listening has become a significant part of Wolcott's pedagogical approach.

Gilman also bases his pedagogical approach on the individual needs of his students, because they all come with varied backgrounds in etude/repertoire study and future plans. He assigns etudes to increase their ability to explain pedagogical concepts to their future students, although they may not necessarily execute the skills at a high level. Gilman stated that because 80-90% of his students are education majors, he has to be

sensitive with his approach to remedial work. In these specific cases, he often focuses on pedagogical issues instead of specific technical or musical issues:

> I have to be careful–and I wasn't when I was a new teacher–I have to be careful not to try to cover all the areas that they are missing because that's really not going to be their goal out there. The areas that they are missing if they are an education major, I try to cover more in pedagogy. . . . [I tell them] that "the only reason I'm giving you this exercise is that it has many of the techniques in the piece that you are learning and, in effect, it is more difficult. If you can spend some time here–even if you don't master it–you will gain something in your performance" . . . but it's a tough sell sometimes.

Gilman strives to maintain the emotional and psychological wellbeing of his students, and takes into consideration their future goals as musicians.

Ngai's individualized pedagogical approach parallels the philosophy of Lewis, in that he tries to "apply a principle to the individual, rather than try to teach the individual a specific method." Although Ngai follows an individualized pedagogical approach, he believes in etude study as a way to reinforce particular skills "as [a] laboratory" in the practice room. In conjunction with Kreutzer (1963) and Dont (1968) studies, Ngai creates short exercises for his students to memorize and execute on their own. Ngai explained this pedagogical strategy:

> They work on the technique in isolation of the piece, and then try to apply it to the piece. I basically try to tell people not to practice as you see things on the page–disassemble them–because you get caught up with the technique. Ultimately when you are playing the piece, you want to be thinking about the

> music. . . . If you are going to take a passage of the piece, just take it out of the context completely: just do the note heads, not even rhythms, or do bowing exercises with the rhythm, or not the left hand–hands separate just like they do in piano, and [then] put things together.

Ngai encourages his students to isolate the problem (e.g., the shift or the string crossing), and separate the technique from the actual context of the music in order to master the skill outside of the repertoire. According to Ngai, when students are expected to execute a difficult technique in performance, their brain will not have negative psychological associations with the skill. Instead, they focus solely on creating their artistic, musical interpretations.

Ngai and his wife, who is also a violinist, were influenced by the pedagogical strategies of John Kendall. In their opinion, the most effective strategy is "stop think and play . . . finger before the bow." Ngai believes that through patience, the stopping and thinking allows the brain to wire tasks effectively:

> If you do something well correctly, even if it is super, super slow . . . it's that thinking and it's that time that allows the wiring to take place. . . . Myelin [is] the material that wraps around the neurons in the brain. Once there is a connection, and if you repeat that connection in a thoughtful manner, this myelin starts to–it's like wrap-around electrical wires. It reinforces it so that the impulses won't mis-fire or get mis-directed. When you are relying on a reflex ability, it is always going to be there because it is basically like a secured, designated line.

Ngai stated that this pedagogical strategy is based on the premise of practicing slowly in a specific way to "develop very small bits at a time" through set goals. This concept

parallels the correlation studies of Galamian (1999) and the connection between the brain and muscles through scaffolding.

Huang's remedial approach has been influenced by her Galamian lineage, in finding the most natural setup of the student and nurturing their individual needs through "no specific prescription to anything, other than [being] comfortable." Galamian (1999) states, "The making of rigid rules is a dangerous procedure, since rules as such should be made for the good of the students rather than using the students to glorify the rules" (p. 1). Huang added, "Of course there are different levels of comfort. When you are playing it is impossible to be completely comfortable, at your best. You know how it is!" In addition to the challenge of finding comfort with the instrument, Huang believes that technical/musical skills that have been reinforced for many years are difficult to reverse through rehabilitation. She often encourages her students to exaggerate concepts in the opposite extreme in order to physiologically feel the differences. She explained this pedagogical principle:

> To break the old habit you almost have to go to the other extreme, to either remind yourself or to feel it. If you normally just practice five times–maybe if you are correcting something–you have to do it four times as much, for example. And it takes a long time–it's just natural. Problems don't get fixed overnight. So usually I expect at least six months to a year, or even longer. The student really needs a lot of determination . . . simply just following directions and trusting the teacher.

According to Huang, students must have patience and determination to endure the remedial process, as the changes do not happen overnight.

Similarly, Bargerstock does not have a specific prescription for correction, but instead tailors her approach to each individual student. She assigns scales with the metronome, arpeggios, and various exercises that she acquired through her studies with Brodsky to ensure that her students are aware of their bow hand and strengthen their pinky finger. Bargerstock also assesses the need for remedial work in terms of shifting and note reading by giving all of her students *Introducing the Positions Book 2,* by Whistler (1989b). She explained the following pedagogical strategy in assessing both shifting and note reading:

> I almost invariably have them go through the second Whistler (1989b) book for positions, because second, fourth, sixth, and seventh are usually just weaker. I let them find their own level. I'll say, "Here you go, play until you can't play anymore." Some of them can't even play the first page, and so we do the whole book. . . . That's just [to test] them for reading. I even have some students who come in and they really haven't been reading the music, really. It's not very often that I do find that there are some students who have such good ears that they have just been approximating what is on the page for a long time. . . . They have been smarter than their teachers.

Bargerstock uses these assessment strategies to not only decipher her students' understanding of shifting, but also their capacity to read music. Lewis, Christensen, Gilman, Ngai, Wolcott, Bargerstock, and Huang all proceed through the remedial work in an individualized manner based on the most pressing deficiencies of their first-year students.

Sequential development. By contrast, Gillham, Dalbec-Szczesniak, and Clapp implement systematic remedial strategies with their first-year students. Although Gillham does not have a specific pedagogical methodology for rehabilitation, he has compiled a book of potential remedies for almost all technical issues. He provides his students with a copy of this book so that they can use the materials on an individual basis, depending on the technical issues that need to be addressed. According to Gillham, his students work on Kreutzer (1963), "through the first six or seven in [Josef] Gingold's order," Dont (1968), and Paganini (1977). In addition, everyone is given Schradieck (1928), everyone is assigned shifting exercises, whether it be Yost (1928), Sevcik (2010), one-finger scales to learn how to release the finger, or exercises that Gillham adapted from Zweig. Furthermore, everyone is assigned Vamos (2012) double stop etudes. According to Gillham, the Vamos exercises are useful, because there are seven or eight different patterns that are reinforced without any shifting, and all of the patterns are practiced in each position on three different sets of strings. Gillham stated that the exercises often help students self-correct issues in the left hand, develop independence in their fingers, and build strength and flexibility.

Following the initial assessment of her first-year students, Dalbec-Szczesniak assigns Kreutzer (1963) etudes and a specific prescription of scale studies that were passed on to her from Fenyves. The scales cover a multitude of techniques: working through the circle of fifths, reinforcing various finger patterns, and ensuring that students understand the entire fingerboard. Dalbec-Szczesniak requires her students to verbally explain how they are shifting, the interval that they are shifting, the shifting finger, and the position to which they are shifting. She stated, "By the end of the first year, they, at

least in theory, know their fingerboard quite well." In terms of repertoire choices, there is a specific pattern that she maintains with all first-year students, where she saves the major works until they are technically/musically ready to handle them.

Clapp also had a systematic remedial approach and viewed learning the violin in the same sense as learning how to read. Through this perspective, he capitalized on the developmental principle of sequential knowledge acquisition:

> One way I explain it is when you first started reading, you saw, "T-H-E" oh! "The." When you first started playing the violin, somebody said press hard enough so that you make a note, and keep the violin from slipping by putting on a sponge, and by keeping your hand up against the right side of the neck. I say ok, so that's like the "T-H-E." That's the beginning phase–it's okay. Now it's time to move on to the next step in this progression.

Along with this sequential progression of learning, Clapp implemented the "Detective Series" checklist with his students. He explained this pedagogical strategy:

> First of all, something is wrong. [Identify] what is wrong, why is it wrong, how do I fix it, and then set up practice brackets to break apart the motion so that the thing that is supposed to happen first does happen first. . . . [We] talk about what is first, what is second, what is third in this dissected sequence of motions. Everything that you do is four or five or six motions . . . and so you have to start with the first one, get that right, and then build on that.

He added, "The analysis–the detective aspect of being a 'practicer' is something that is very important to me." Clapp supported metacognitive practices, asking questions, and etude study. He stated that instructors do a dis-service to their students when they focus

solely on repertoire, because etudes develop the technique required for remedial work and advanced repertoire. Through observations, Duke and Chapman (2011) determined that "Professor Clapp ask[ed] many questions that prompt[ed] the students to analyze their own playing, both physically and auditorily. He devote[d] considerable time and attention to facilitating self-analysis" (p. 36). The pedagogical philosophies that Clapp instilled in his students highlight the legacy of both DeLay and Galamian.

Some of the participants base their approach to remedial work on the individual needs of the students without a set prescription. Others have specific steps, sequences of repertoire/etudes, or developmental principles that bring students through the steps of rehabilitation in a sequential manner.

Technical and Psychological Strategies in Addressing Posture Issues

The participants have diverse pedagogical strategies when addressing posture issues with their first-year students. The strategies are informed through: their personal successes in overcoming tension throughout their studies, the acquisition of knowledge from their prior instructors, and the Alexander Technique.

Alexander Technique. Both Dalbec-Szczesniak and Christensen believe that posture affects all facets of violin playing and follow the principles of the Alexander Technique (Alexander, 1910, 1923, 1932, 1941). With her first-year students, Dalbec-Szczesniak uses a "hands-on" approach, so that they internalize the physiological sensations of proper alignment and tension-free playing. She stated, "I work with them closely in the first year really moving their body around, putting a hand on their shoulder, or showing them how to stand, or I will pull their head back." This specific interaction

and modeling reinforces skills through a social type of learning strategy. Dalbec-Szczesniak further explained the importance of posture:

> Posture is an awareness that [you] are not letting the small of the back fall forward like a sway back, and belly out, and locked knees, because then you are not supported where you need to be. The big factor in Alexander Technique is that the head is very heavy, and most kids feel like they need to sort of clamp the head and neck around the instrument. So my big thing is [to] play without the head, and keep the head above the spine, and be able to move it freely, talk, [and] eat–whatever–while you're playing. For a lot of them, this is such a foreign thought and feeling.

Dalbec-Szczesniak approaches posture in a hands-on manner, so that her first-year students have the opportunity to imitate and internalize the motions.

With first-year students, Christensen establishes the importance of standing in a balanced and poised manner, without the violin in their hands. He explained his frustration with inefficient posture:

> A lot of people in their long history of playing the violin . . . have come up with ways of holding themselves and holding the violin that are not necessarily efficient. It has worked for them in some sense, but they have a shoulder that is hitched up, and an arm that is pushed forward, and a head that is thrust out, and uneven weight on their feet so one hip is sticking out . . . and for whatever reason, it is not addressed. So if we can't stand up, we can't play the violin.

Christensen believes that posture must be addressed first before any progress can be made, and does not move on to the violin hold until his students are able to stand in a

balanced manner. Tursi (1955) parallels the beliefs of Christensen, stating the importance of establishing efficient posture in the early stages of learning:

> As teachers, we should note how our students (particularly the beginners) use their bodies. This use should suggest our course of procedure. If we fail to do this, we invite increased difficulty or, perhaps, total failure at a later stage. . . . Because posture is fundamental, we should begin with it. (p. 6)

According to Dalbec-Szczesniak and Christensen, posture is fundamental and should be addressed at every stage of development through the Alexander Technique and balanced, efficient movements.

Body awareness and stretching. In terms of technical/musical development, Lewis views body awareness as the foundation. He provides a stretching routine for his students and claimed that the level of fluidity in their sound indicates how much they stretch in the practice room. Lewis also encourages his students to watch YouTube videos of various violinists to gain a visual sense of the posture, body awareness, and plane of the violin that they address in their lessons. Similarly to the philosophies of Lewis, Carl Flesch (1930) states, "The most important of bodily hindrances [are] the excessive, incorrect or entirely missing rhythmic *movements of the body*" (p. 92). In order to combat body stiffness, Flesch (1930, 1939) advocates the importance of gymnastic exercises without the violin, swaying movements of the hips, and an understanding of how the body moves in relation to the bow direction. Lewis (2010b) echoed these beliefs, stating that "physical tension is the enemy of music," and that violin instructors need to be aware of this principle from the outset of instruction.

Ngai's first-year students are encouraged to use what he refers to as the "complete body" in their violin playing. He believes that "it all comes down to how you stand," and tries to "develop the root first." He encourages his students to balance their bodies from the base or root upwards, through an awareness of positioning the feet, unlocking the knees, aligning the hips, and balancing the shoulders. He claimed that "there is no hope for the bow arm to be relaxed if there is tension in the neck," and has a methodical checklist that he goes through to ensure that students have tension-free body awareness.

Gillham develops body awareness in his first-year students by first discussing how to hold the violin away from the instrument and stretching. He claimed that in his teaching practice, many first-year students have this "propensity . . . to hold their violins way to the left and then twist their torso." As a result, they cannot draw a straight bow all the way to the tip and have to push out from their shoulder. He explained this issue further:

> If you watch somebody like David Oistrakh play, his hands are more or less right in front of him . . . so I have this thing called the "zone of power," which is sort of this 45 degree angle. . . . Your hands are right in front of you, as opposed to twisting.

Gillham often uses the example of washing dishes to illustrate the importance of facing tasks without needing to twist the body. In a similar fashion, Clapp ensured that his students did not twist their neck, drop their violin towards the floor, raise their right shoulder, or change the angle of their instrument in relation to their body.

With first-year students, both Gillham and Gilman incorporate exercises that are proven to be effective with young students, because they develop some of the most basic

motions in violin playing. Gillham often uses the Rolland (1974b) pedagogical strategies that Zweig implements with her beginner students, which include putting a "Magic X" on their left hand or a "high dot" on their violin. He encourages them to practice the "Statue of Liberty" stance, invites them to put the left hand on the right shoulder in playing position, walk around the room, and nod yes and no. Similarly, Gilman often incorporates Rolland (1974b) and Hamann and Gillespie (2012) exercises of tapping and sliding. Gillham believes that the strategies help the students understand their own posture and, more importantly, they "empower them to teach the next generation." Gillham implements these exercises within the private studio lessons to ensure that the students remain emotionally secure. He stated the following about maintaining a nonjudgmental studio environment:

> If they are 19 and 20 years old, I'm not going to have them do it in front of their peers in a master class because I don't want to embarrass them. But certainly I like to have my studio as a place where you can come in and feel safe, and be willing and able to try anything.

Gillham strives to maintain a nonjudgmental environment in his studio, so that his students feel physically and psychologically safe, and their sense of self-efficacy is not compromised.

Equipment assessment and comfort with the instrument. With respect to posture, Huang does not follow a specific prescription, but instead looks for comfort with the instrument. According to Huang, there are many variations in terms of how one can stand, and stated that "all of these work if it is done comfortably and correctly. So I wouldn't correct them unless it is really affecting their sound, and they are really

uncomfortable, and playing with a lot of tension." With first-year students, she assesses their arm length and choice of shoulder rest because this determines their level of comfort when holding the instrument. Galamian (1999) states that posture "should not be the object of exact prescriptions other than that the player should feel at ease. . . . Likewise, there should not be any exact rule given as to how to hold the instrument" (pp. 12-13). According to Rolland (1974b), this ease is established through balanced movements, as "balanced objects can be moved with minimal effort" (p. 32).

Bargerstock also believes that posture is influenced by the equipment students use and how it aligns with their physiology. She begins with an assessment of the shoulder rest and chinrest, and stated that when the chinrest is adjusted to the proper height, a shoulder rest is not required. For tall students with long necks, she advocates the chinrest kits that can be purchased through Frisch and Denig. When implementing remedial pedagogy, Bargerstock addresses posture issues first before moving on to one skill in either the right or left hand. She explained her pedagogical strategy:

> If there is tension in the left shoulder and neck, then that is just transmitted down the arm to the hand usually. First, you do the general posture, [and] then, you pick one hand or the other. I don't think you can do both hands–you can't be talking about their shifting and, "Oh, by the way, you have to have a straight bow." They can't do that–it's too much. I usually decide by picking what is the most obvious or the most debilitating problem to work on first . . . and then, after that issue gets settled, and it may be another year . . . however long it takes, and then you can go to the other side of the body.

Bargerstock is patient in her approach to rehabilitation and strives for comfort with the instrument. Similarly, Wolcott encourages natural, comfortable posture, and his approach is determined by the personality of every individual student to ensure that they are not emotionally overwhelmed.

According to the participants, the Alexander Technique, body awareness, physiological freedom from tension, and appropriate equipment affect the postural alignment and potential for musical freedom in first-year students.

Technical and Psychological Strategies in Addressing Left Hand Issues

With first-year students, many of the participants believe that the success of the left hand is most often affected by posture. If the issues are not corrected in the larger muscles first, the left hand may be hindered both technically and musically. In addition to posture, the participants believe that first-year students often require an understanding of left hand efficiency in terms of finger patterns, the release of tension, the placement of the elbow, and basic shifting principles.

Effects of postural alignment. Christensen, Bargerstock, and Gillham believe that all issues in the left hand can be traced back to the ways in which students stand and use their bodies. For example, the efficiency of the fingers can be affected by a wrist that is sticking out, an elbow that is in the wrong place, a hitching left shoulder, uneven weight on the feet, or mis-aligned hips. Christensen claimed that "if the posture is messed up, you can't fix in isolation," and therefore, cannot move on to more detailed technical issues.

Loose hand position and thumb. Christensen, Bargerstock, Gilman, Lewis, Clapp, and Wolcott all address left hand issues through an assessment of tension.

Christensen claimed that he does not have specific expectations for the left hand but, instead, general guidelines. He looks at the placement of the thumb between the first and second fingers, and the angle of the wrist so that it does not bend too far in either direction. He also ensures that the fingers approach the string on the flexible part of the pad, to allow for better vibrato and more flexibility in adjusting intonation.

With the left hand, Bargerstock first addresses postural issues and then focuses on possible tension. She ensures that the fingers do not press too hard on the strings and that the thumb does not clutch the side of the fingerboard. She explained:

> If you haven't settled the chinrest, shoulder rest deal, there is no freeing up– liberating the left hand. So first thing is the posture of holding the violin, and then, also, if they are squeezing the right hand, they are probably squeezing the left hand, because it is usually sort of a mirror thing.

Rolland (1974b) parallels Bargerstock's pedagogical perspective, stating that "balanced support, not a vise-like grip, is the most efficient way to hold the violin" (p. 34). Bargerstock advocates comfortable posture, appropriate equipment, and freedom from tension to encourage efficiency in both hands. Gilman addresses the physiological concepts of tension and release in the left hand with his first-year students. He often discusses the musculoskeletal formation of the hand and the positions required to relax the tendons and muscles. His pedagogical perspective is dependent on the mental and psychological maturity of the student, regardless of their ability.

Both Clapp and Wolcott claimed to have a unique approach to left hand issues. Clapp believed that all left hand problems stemmed from shifting, and, more specifically, with the release of the finger before the shift. He stated that his students rarely had issues

in a specific position, until they had to navigate the fingerboard. He explained this concept further:

> Left hand is never just talked about in first position. It's always where you need to go to play these pieces. Shifting is the big deal . . . the "whistle plus two ounces," and then the release of the finger before the shift. . . .[They play] the passage solid except for the one note before the shift . . . as a whistle. That takes a lot of coordination, but if they really do it, it helps the shifts terrifically.

Clapp encouraged his students to release their fingers to a whistle before shifting to ensure that their left hands remained loose in every position. Wolcott believes that left hand issues are difficult to assess because students physiologically respond to information in diverse ways. He asked the following question regarding the release of tension:

> Now how do you communicate that? What you say to one student, of course, will not necessarily work with another student if you say the same thing, even if they have the same problems. So you have to find different ways to communicate. It helps to keep a list of phrases that work.

Wolcott takes into consideration the different ways that students process information and compiles lists of successful approaches and phrases for executing certain skills.

Awareness of finger motion and elbow placement. Gillham, Dalbec-Szczesniak, and Ngai believe that one of the most pressing issues in the left hand is extraneous motion when the fingers lift and drop, which causes the hand to be too open and the wrist to flick. To address this issue, Gillham encourages his students to release each finger and transfer the balance from finger to finger without lifting them off the

string. Gillham uses the Flesch (1970) *Basic Studies* as opposed to the more traditional Dounis (1921) exercises, as he claimed that Dounis exercises are challenging for some students. In addition, he uses Bytovetski (1917, 1921) exercises, which he acquired through his studies with Zafer. Gillham stated that Bytovetski exercises are effective because they isolate one finger at a time, and train the fingers to stay curved and close to the strings when they are not in use. He often begins with second, third, and fourth fingers down on the D string, on F sharp, G, and A. The first finger lifts and drops an octave lower on the G string on A, G, A, G, A, G, A. Following the first finger, he then lifts and drops the second finger on B, and so forth. Gillham uses a methodical progression of etude studies to increase the efficiency in the left hand. Dalbec-Szczesniak also encourages left hand efficiency by minimizing finger motion and promotes understanding passages in terms of patterns. She explained this pedagogical strategy:

> There is speed there if you keep things down and put down groups of fingers at any given time. . . . These are patterns that repeat themselves over and over again, and you can rely on them if you trust that they are going to be the same. . . . A lot of them think note to note and don't think in terms of patterns. That's a hard concept for a lot of them to understand–chunking groups of notes together and seeing them as a whole.

Dalbec-Szczesniak's first-year students increase their left hand technique through an understanding of exact distances and measuring the fingerboard with efficient motions.

Ngai's also stated that his students exhibit extraneous finger motion, which causes the thumb to contract and the hand to clutch the fingerboard. As a result of this clutching, the knuckles are thrown out of alignment with the fingerboard. Galamian (1999) states

that “the hand should not press against the instrument (should not clutch it), since this causes tensions and severely restricts the freedom of action of the fingers, hand, and arm” (p. 15). Ngai uses an exercise with his students that he learned from Eugene Drucker. Students find the ideal balance in the hand by first playing passages without the thumb, and then playing the same passage with the thumb touching the neck, but without his chin on the violin. The purpose of the exercise is to find comfort in both extremes, regardless of the difficulty. Ngai encourages his students to exaggerate this concept for practicing purposes only, in order to feel the role of the left arm as a support mechanism for the fingers. Through this practice, they are then able to engage the thumb for support or the chin for support, depending on what is technically needed at any given time in the repertoire.

Dalbec-Szczesniak, Bargerstock, and Huang believe that the location of the elbow affects the left hand position and location of the fingers on the fingerboard. If the elbow over-rotates or under-rotates, the fingers may be outstretched or not above the appropriate string. Bargerstock also assesses the placement of the elbow to ensure that it is not under too far, as she believes this hindrance is often a result of an exaggerated request from prior instructors. Huang stated that “some kids come in with their elbow swinging all the way to the right which is extremely uncomfortable . . . they are very limited, and it makes them very, very tense.” Galamian (1999) discusses this issue:

> The older schools of violin playing required every student to pull the left elbow far to the right. Players with long arms and fingers, who followed this rule, found that their fingers assumed an awkward curve and leaned too heavily toward the G-string side of the fingerboard. . . . The immediate consequence was the

> development of a severe type of handicap in all kinds of finger motion and especially in the vibrato. . . . Players with short arms and fingers will have to bring the elbow fairly far to the right, whereas those with long arms and fingers will find that the elbow will remain somewhat more to the left. (pp. 13-14)

Although Galamian (1999) believes that the approach to the instrument should be individualized, the elbow placement dictates how the fingers lift and drop onto the fingerboard, which affects intonation and muscle tension.

The participants believe that left hand issues can potentially stem from postural problems, tension, or physiological discomfort with the instrument. With regards to left hand technique, the participants have accumulated subjective exercises and strategies throughout their prior studies and teaching experiences.

Technical and Psychological Strategies in Addressing Bow Arm Issues

When the posture and left hand are visibly comfortable, some participants then focus on the right arm and address bowing issues, with specific pedagogical prescriptions.

Internalization of skills through scaffolding and balance. Christensen has specific steps that he takes when addressing the bow hold, as he does with other aspects of posture and left hand technique. With the assumption that the posture is comfortable, Christensen stated that he often leaves the bow until he absolutely has to address it. He explained his systematic approach:

> I will leave screwed up bow holds until last, because it is such a can of worms in terms of getting that to work. And you're better to get the overwhelming issues at least kind of functioning in terms of their posture and then deal with their bow

> later. I've got a set of five things that they do: they hold their palm in front of them, palm up, and with the left hand, they place the bow on the middle two fingers with the middle two fingers balanced between the grip and the frog. [Then] they bend their thumb and touch the thumb to that point where the thumb touches the stick between the grip and the frog, which is opposite those two fingers. Then they go to straight up and down–their first and fourth fingers are still up in the air. Then we do a little squeezing exercise where they squeeze and do a down-bow and relax and do an up-bow. That kind of gets everything balanced, and then they plop the first and fourth fingers down and they point the fourth finger.

Christensen understands the difficulties often involved in correcting bow holds and believes that the specific steps that he follows foster success in his students.

Wolcott also has specific strategies that he follows with the bow arm, and claimed that with his first-year students, he usually has to correct "everything." According to Galamian (1999), "The right hand . . . generally cause[s] most of the trouble for the violinist" (p. 44). Wolcott addresses broad concepts of bowing more so than the specifics with the bow hand, stating, "The greatest concept that is lacking, in my opinion, is balancing the bow on the violin. I don't think students know what that means . . . to let the whole weight of the bow rest on the violin." According to Wolcott, many teachers stress the importance of arm weight into the string, but lack in their explanation of what is really happening with the bow. He has specific steps that he takes in order for students to feel this concept in their physiology:

> I will take a student's index finger and thumb only, have them put the bow at the frog, and I will have them hold the bow at the screw only with their index finger and their thumb. Then they pretty much have no choice but to feel the weight of the bow on the string and they have to balance it . . . and then, they realize that they don't have to hold on to the bow and that the violin basically holds on to the bow for [them].

Through Wolcott's systematic progression of steps, students understand how to balance the violin and bow, and how the bow weight generates the tone.

Similarly to Wolcott, Lewis systematically addresses the balance of the bow with his first-year students, and explains how to balance the hand to every finger on the bow:

> I have them put their violins down and they put the tip of the bow on their left shoulder, so that they can see the bow and the hand in front of them and it's just resting . . . we take out all of that weight factor as we work on balance issues. I divide the hand into two parts: lower part and upper . . . the top hand and the bottom hand. The first finger and the thumb is the top hand, and the pinky is the bottom, and the two middle fingers are going to be our way to seamlessly go from the top to the bottom. So how we use the middle of our hand and bow hold I find very, very important.

Lewis further explained that students with a relaxed bow hold also tend to have a relaxed left hand, adding, "Our whole goal in life is to separate out the left hand and the right hand, in order to be independent things, but to work together." This separation is difficult when playing an instrument because both hands are affected by each other. Lewis encourages balance between the hands and in every facet of technique, because it carries

positive connotations. Rolland (1974b) parallels this notion of balance, leverage, and support in violin playing:

> The weight of the bow arm is partially balanced by the instrument and the left arm. Avoid tension caused by gripping or supporting the bow excessively. Let the bow rest on the strings and the relaxed arm cling to the bow. Good leverage and balance help to do things with little effort. With good leverage, balance, and free movement it is easy to produce a big tone. (p. 41)

Lewis encourages natural, balanced positions that work best for each individual student. Lewis (2013) explained the importance of bow technique in a YouTube video:

> DeLay had us practice specific bow strokes for seven or eight minutes a day. Do it for eight minutes and put it away . . . so we had an arsenal of bow strokes. . . . We want to develop an ability and make it a part of you . . . that's what we're doing for skill acquisition. . . . Head knowledge is one thing, but we want to make sure we can do it, as well.

Through the influences of DeLay, Lewis advocates an internalization of bow technique in order to increase the potential for musical freedom and artistry in his students.

Mobilizing fingers and muscles through fundamental bow strokes. Gillham, Huang, and Bargerstock encourage loose, mobile fingers on the bow, and advocate an understanding of the martelé, detaché, and collé strokes with their first-year students. Gillham (2010) states in his blog that "successful bow changes require an understanding and mastery of the finger stroke (think collé). The collé and martelé strokes are fundamental to a sound violin technique." In his interview, Gillham elaborated on this concept:

> I think the finger stroke is very useful–not on a daily basis–but especially for kids who have cramped, stiff hands. Learning to control the bow with a finger stroke seems to loosen everything up to a certain point where then you can just say, "Alright, now don't do anything with your fingers." . . . If the fingers are super loose, work on martelé and detaché using the bigger muscles.

Gillham believes that the basic bow strokes must be understood before any extended bowing techniques can be mastered.

With her first-year performance students, Huang often notices tension in the right forearm, which causes the bow to be crooked, stiff fingers, or a locked wrist. She attempts to solve these issues by restricting the bow use to only the upper half in order to encourage both finger and wrist motion. She claimed that "sometimes just some kind of movement . . . something very basic–even if it is incorrect–but just to get them moving. Once they are mobile, then, you can ask for a little more." She stated that when students go to the extremes of being mobile, she can then work to bring the exaggerated motions back into balance. Similarly, Bargerstock strives to mobilize the "springs" in the fingers. According to Galamian (1999), the right hand is based on a system of springs, and the two main defects occur when the sound is too tight (the springs are too firm) or the sound is too loose (the springs need to be tightened). Galamian (1999) states the following about the bow arm:

> The *correct* bow grip must be a comfortable one; all fingers are curved in a natural, relaxed way; no single joint (knuckle) is stiffened; and the correctly resulting flexibility must allow all of the natural springs in the fingers and the hand to function easily and well. (p. 47)

Like Galamian, Bargerstock, Huang, and Gillham utilize the collé stroke in order to soften the fingers of the right hand, engage the "springs," and maintain a loose hand position.

In a similar fashion, Clapp looked for a tension-free bow arm, loose shoulder, and loose bow hold, with fingers released on the bow. He encouraged his students to hold the bow vertically to the floor and then release the fingers until the bow just started to slip. According to Clapp, this indicated the perfect amount of finger pressure in which to do spiccato bowing. He further explained this strategy:

> The pressure of the fingers tightens the wrist and the elbow, and makes spiccato not work. Then you start adding pressure–and this is the Dounis influence. You start adding pressure as you go towards the tip with the index finger on the down-bow, and, on the up-bow, you are balancing the hand toward the fourth finger . . . so that there is a constant seesaw going on in the hand. If the hand is tight all the time, that can't happen.

As an instructor, Clapp's priorities were tension-free, balanced playing, and claimed, "If it ain't broke, don't fix it."

Through Ngai's studies with Williams, he incorporates the notion of a pivot, or seesaw with students who need to reconstruct their bow hands. Ngai explained how "each of the fingers has a role and that even when you play a four-note chord, each of the fingers has a role . . . you can assign a string to each of the fingers and you really feel the instrument." Ngai first assesses, as he stated, "the bigger picture" of how the bow naturally wants to move, so that he can then make minor adjustments. Ngai often finds that if he focuses too intently on the details of the bow hand, students become obsessed

with minute issues and forget how the bow arm should feel. When this happens, he often has to go to the other extreme where the students shake out their arms, play "air violin," and feel how the bow arm moves without thinking about it. Ngai believes that this approach works effectively because they are "less fascinated with where their first finger needs to be, and they are more concerned with just opening up from the shoulders and the back." In addition, Ngai often finds that his students avoid playing in the lower half of the bow because of their physical discomfort. He explained:

> You feel like you need to close the arm in order to get to the heel of the bow, but I always try to tell them it's actually the opposite. You have to imagine your arm stretching further out, and then your arm sort of winds back in, like you're reeling in a rope or a hose. The hose isn't any shorter, it's actually just coiled around, and that keeps the shoulders and the back feeling spread and open. Rather than trying to contract anything, I think it's an expansion, but the expansion comes back in. I think that the idea of contraction is not a very good plan in violin playing because I used to do that, and my teacher used to say, "Well, you're tightening up, you're locking up, because your muscles are contracting and they are not releasing." . . . When you expand, there are certain muscles that are contracting, but there are other ones that are lengthening. It's the lengthening that actually gives you a lot of outward energy, and it also is influenced by how you use your skeletal structure and how you align your bones. If you can align your bones and use them more than your muscles, then your muscles have less of a burden. If you have small muscles, you need to have larger muscles and your bone structure to do the bulk of the work so that the fine muscles can confine themselves to just really

> developing a sensitivity and control and monitor what you are doing on the instrument.

Ngai focuses on the expansion and contraction of the muscles in order to maintain tension-free playing and beautiful tone. He believes that one of the most difficult tasks in his teaching occur when a student is "so tightly wound up, that when they play you think, 'How am I going to get this person to relax?'" As an instructor, Ngai strives to discover how his students' arms naturally function and then tries to maintain that feeling with the bow in their hands.

Tone production and the three-dimensional string. In the first few months with first-year students, Dalbec-Szczesniak focuses on drawing long bows, in order to produce the right type of sound and contact point. She also assesses whether the weight is coming down on top of the stick and hair, whether the weight is deflecting towards the bridge or the fingerboard, and whether the thumb and knuckles are flexible and spongy. Dalbec-Szczesniak claimed that "a lot of kids come to me with bow holds that are not lined up right . . . the hand is shifted right to the end, and so, there is a big relearning, and they always feel really uncomfortable for a while." She has particular criteria for the bow arm that she assesses in the first lessons, but she also understands that the remedial process can be daunting for students. She believes that it takes considerable awareness on the part of students in terms of understanding their own physiology.

Dalbec-Szczesniak also focuses on the tone and sounding point, because "the left hand doesn't produce any sound." The bow creates the sound, and as Lewis (2010b) stated, "We need to communicate through sound. Sound is what grabs us." Dalbec-Szczesniak ensures that her students take the bow to the various strings with the

appropriate elbow angle and keep both shoulders down. She also stresses the importance of the three-dimensional string, so that:

> They are really pulling and pushing the string the way they should, to get maximum traction . . . and without effort. For a lot of them, that's a really different but exciting new kind of concept to think about–what side of the string they want to be on.

The bow hold, how the bow is drawn, and the elbow levels affect this concept of core sound. Similarly to Dalbec-Szczesniak, Gillham focuses on the three-dimensional nature of the string. He encourages vertical pressure onto the string with horizontal tension either towards the right or the left. He also stresses how to balance the bow between the fingers without tension and how to transfer the weight of the arm into the stick, through a sensation that he calls "the hang." In addition, he often incorporates some of Zweig's pedagogical strategies, and makes "pinky houses" for postsecondary students requiring help with their bow arms. He stated that it is important for students to know how to make them, above all else.

With the bow arm, Ngai often finds that students try to create a big sound by pressing rather than pulling the sound out of the instrument. This is a similar concern for both Dalbec-Szczesniak and Gillham, in terms of making students aware of the three-dimensional string. Ngai focuses on coaxing the sound out of the instrument and encourages his students to allow the instrument to breathe. Ngai states that in order "to understand tone production, players should learn a bit about the physics and physiology involved in playing a stringed instrument . . . [where] fluidity and ease of motion [are

essential]" (Freiberg, 2003, p. 59). Ngai claimed that the bow is his personal obsession, because there are many successful and unsuccessful ways to hold the bow.

Many of the participants believe that the bow arm is a difficult technical concept to address because of individual physiological differences. Some of the participants stated that they follow specific steps when rehabilitating bow arms, while others focus on creating natural, loose positions and motions. Many agreed that tone quality is a crucial factor in bow technique, as this is the sole way that music is transmitted to the audience.

Technical and Psychological Strategies in Addressing Shifting Issues

The participants' approaches to shifting are often dependent on the level of the students' previous instruction and their proficiencies in terms of understanding and executing various shifting techniques.

Yost and various shifting exercises. Lewis, Bargerstock, and Clapp assign Yost (1928) shifting exercises to their students. Lewis requires every student to work on shifting exercises regardless of their level of playing or technical proficiency. In addition to Yost, his students are assigned scales in thirds, sixths, tenths, sevenths, fourths, and fifths. Lewis stated that he often brings duos, trios, or violin quartets commissioned for his studio into master class for his students to practice basic shifting concepts. According to Bargerstock, Yost exercises encourage students to "understand the fingerboard and get the feeling of floating–just running up the length of the string" in a tension-free manner.

Christensen addresses shifting techniques when his students show evidence of a relaxed posture, loose thumb, and correct finger angle. Christensen begins with two octave scales or Schradieck (1928) exercises in first position before introducing the concept of shifting from one position to another. When the students have increased

mastery in first position, he then moves on to Sitt (1907) *Op. 32 Book 2*, which has exercises in second and third positions. Christensen stated, "A lot of times I find that if you can get them so that they can actually play in these various positions, the issue of how to get there gets a lot easier because they are comfortable in that position." Through this process, Christensen teaches shifting in a way that is simple and accessible.

Scaffolding through knowledge of basic shifting principles. According to Christensen, students are often required in orchestra to play high notes on the E string without an understanding of how to navigate the fingerboard efficiently. Galamian (1999) states the following regarding poor shifting technique:

> One of the [most common] faults found in shifting is that of shortening the note preceding the move. The reason behind this fault is always a psychological one. The player worries about the shift to the point that he loses rhythmic control and nervously anticipates the correct moment for the move. This gives a feeling of insecurity and great unevenness to the passage. (pp. 26-27)

To combat this insecurity, Christensen explains that when shifting from first to third position, "all we do is close the angle of our arm a little bit and move the whole arm as a unit up from this place to this other place." Christensen begins with auxiliary note shifts, emphasizing the old finger and the old bow and how the finger patterns change from position to position: "By teaching auxiliary note shifts, you force them to understand their finger patterns, where we go from two and three close in first position to one and two close in third position." Christensen's perspective on shifting was influenced by Fenyves throughout his studies, stating, "He was militant about the auxiliary note, and he was great with it. It was a revelation because nobody had ever taught me how to shift before!"

When students are comfortable with the auxiliary note shift, he then moves on to more expressive shifting techniques; this includes the compression and expansion of the hand and the use of extensions.

With her first-year students, Dalbec-Szczesniak also reinforces the concept that the shifting finger is the old finger on the old string. She stated that some students lack this knowledge of basic shifting principles and assume that they always shift with the first finger. Dalbec-Szczesniak explained this issue:

> I'm still reminding them when they play out of tune, "Did you use your shifting finger?" "Ummmm no" . . . "Ok, which part of shifting finger do you not understand?" And I've always said, "If I'm using shifting fingers at my stage of development and I'm a concertmaster in an orchestra, so I do a lot of playing and I do a lot of chamber music. If I'm still using shifting fingers and really thinking about how I'm going to get somewhere, and how I'm going to get down, surely you must have to do the same."

In addition to basic shifting principles, Dalbec-Szczesniak ensures that her students keep the wrist neutral when shifting and move the whole arm as a unit to the new position.

In a similar fashion to Dalbec-Szczesniak, Gillham strives to "hammer proper shifting technique home–shifting with the old finger to the new position and putting the new finger down." Before the shift, he ensures that his students release the finger to a harmonic, lift the finger off the fingerboard but not off the string, and glide on top of the string while listening to the harmonics under the finger between the two notes. He often has his students take their thumb off of the neck when they release the finger to ensure that the thumb is relaxed. Gillham stated that the finger often releases while the thumb is

still squeezing and, therefore, the thumb stays behind while the finger slides in isolation of the hand. As an instructor, Gillham prides himself on being a life-long learner who is open to new perspectives and philosophies. He recently observed Zweig teach a shifting class at a festival, and explained, "It blew me away. . . . I would say I have changed the way that I teach shifting significantly over the last two years." As a result of this experience, he claimed, "When I am learning a piece, I will really go out of my way to map out all of my shifts and listen to them in the learning process." Gillham is open to new possibilities and experimentations in his approach to the violin as he learns from his colleagues.

Huang uses her own rehabilitative experiences with shifting as a means to relate to her first-year students. In her early years of study, she thought that shifting was the most difficult task because her teacher did not effectively explain the technique. She explained her revelation:

> The first thing that my teacher had me do was to slide my whole hand in the natural form up and down the neck and the fingerboard, and I realized, oh okay! That's the basic feeling of it. And then, when he gave me Carl Flesch (1942), the first page of each key, I realized, oh okay! He taught me that I had to release and slide the whole hand, and that was a lot. And then, once I got the concept, he got me to get the timing to it, basically to release half of the note right before the shift, divided by two–basically if it is a sixteenth note, I released at a thirty-second value, the other thirty-second rest to do the releasing and slide. There is a timing to it . . . if you demonstrate to the students, it is much easier.

Through Huang's self-discovery of proper shifting technique, she now methodically approaches the skill through simple motions. Huang's personal challenges with shifting in her early studies support Gilman's beliefs that shifting issues tend to originate with young students. In a similar fashion to Christensen, Gilman believes that most shifting problems start when young students are expected to play high notes in the first violin parts of their orchestra pieces. Gilman claimed the following opinion:

> This is no offence against any method, but I've taught a lot of rehabilitative students at the postsecondary level that have come out of a Suzuki program. The idea there is that for this concerto you will need to be in this area of the violin, so you need to get to that area. But again, there is no instruction on how to do that effectively without harming yourself or accuracy.

Gilman believes that his first-year students often lack the basic fundamental knowledge of shifting techniques. With remedial shifting work, Gilman utilizes Hamann and Gillespie (2012) preshifting exercises, regardless of the level of the students. He refers to these exercises as "television exercises," because students can hold their violins like a guitar and practice shifting while watching television. He stated, "It gets the brain away from, 'I've got to do this right, I've got to do this right,'" and allows students to indirectly develop their technique. Similarly to Gilman's experiences, Wolcott often has to teach basic shifting principles to many first-year students through the Whistler (1989a, 1989b) *Introducing the Positions* books. He also has strong opinions in terms of what students should have the knowledge and mastery of when they enter postsecondary education.

In terms of shifting, Ngai often uses creative tactics to stimulate physiological awareness in his students. For example, he often has students lay on the floor to practice

shifting, in order to feel the hand falling with gravity. Ngai believes that shifting principles are much easier for cellists:

> When you have to shift up to third position–wait–your hand is falling! That's so easy! There's no problem with that! You've got gravity! You don't even have to work! You just have to release your arm and just go! And in a way, that's what we need to trick our brain to think when we shift, that we are releasing downward.

When shifting, he advocates having the scroll at a level where students feels like they are using gravity to complete the shifts. He also encourages moving the violin to the left and up when the hand is shifting, in order to increase flexibility around the instrument. Ngai's pedagogical approach to shifting was influenced by his former teacher, Humphries, who advocated rhythm in shifting. Through this knowledge, Ngai now encourages his students to time every shift, so that they know how long to build the potential energy before releasing the finger.

With first-year students, the participants address shifting issues in various ways in order to simplify the motions, provide in-depth explanations about the mechanics of the technique, and ensure that the shifting principles are executed in a relaxed manner.

Technical and Psychological Strategies in Addressing Intonation Issues

According to the participants, intonation issues often stem from posture, left hand tension, or a lack of critical listening. To examine potential left hand deficiencies, the participants assess the mechanics of the physical setup, how the fingers approach the string, and the students' understanding of finger patterns and distances. In terms of ear

training, students may have deficiencies in their ability to listen critically, or may lack in appropriate early instruction.

Drone tones. Huang and Lewis believe that ear training and music theory exposure in the early years of instruction decrease the need for rehabilitation at the postsecondary level. Lewis, Huang, Wolcott, Gillham, Christensen, and Ngai often provide a harmonic context for their students by playing references pitches, drone tones, or scales in thirds or sixths. Drone tones are sustained notes that provide a harmonic context for students to compare their intonation and adjust if needed. Drone tones may include: open strings, notes that create a perfect fourth or fifth, a major/minor third or sixth, in addition to clashing intervals of a major/minor second or seventh. Lewis believes that drones are effective because students have to listen to the resonance points, the overtone series, and the vibrations of the open strings. Flesch (1939) advocates the importance of open string drone practice in order to improve intonation perception, stating that violinists "should never forget that an acute sense of hearing is the most valuable possession and the most important prerequisite for achieving a high level of artistry" (p. 9). Lewis' students are also required to rehearse and bring a pianist to their lesson every week, and to play in the pianist's lesson and master class. Through this harmonic practice, his students spend hours reinforcing their ear training and development. In addition, Lewis uses Ruggiero Ricci's (1988) book, *Left Hand Violin Technique*, Ysaÿe (1967) string crossing exercises, Yost (1928) shifting, and Suzuki (1995) tonalization exercises to address all facets of left hand technique, which in turn, affect intonation.

Types of intonation and resonance. Wolcott, Gillham, Ngai, and Christensen believe that first-year students lack basic knowledge of intonation and how the violin resonates. Wolcott claimed that many of his first-year students do not know the differences between just, tempered, or selective intonation, especially in terms of playing double stops in tune. He explained his frustration:

> Some people even with perfect pitch will come to me and play thirds that don't sound in tune . . . like a C natural in first position with open E, and they [say], "I don't understand why this isn't in tune because my C is in tune and my E string is in tune, so why does it sound so horrible?" And I say, "Well, it's because you have to adjust the C. You have to actually play the C out of tune in order for it to sound in tune with the E." Nobody ever told them that. Why doesn't anybody ever tell them that?

Wolcott becomes frustrated when students are not given the appropriate technical knowledge before their postsecondary education. According to Spohr (1832), it is the responsibility of the teacher to insist on strict intonation on every stopped note through scale practice, and to promote an understanding of harmonic context (Norton, 1901; Stowell, 2007). In a similar fashion, Galamian (1999) claims that intonation needs to adjust to the context of every moment: "*No one system of intonation will suffice alone*. A performer has constantly to adjust his intonation to match his accompanying medium" (p. 22). Gillham further explained this adjustment:

> Perfect intervals need to be perfect, but when you have the third of a chord, maybe you feel it a little lower, maybe you feel it a little higher–that's okay. There's a little wiggle room there. So creating that awareness of: [the] C sharp

> might feel a little bit tighter if it's a little higher, but if you want it a little lower–if you feel it that way, that's okay. A lot of students haven't thought about that.

Gillham had 10 years of experience in a professional string quartet and incorporates his knowledge of quartet tuning and drone practice with his students. He also uses Josephine Trott's (2007) book, *Melodious Double Stops*, because the first few pages of exercises are double stops with open strings. Similarly, Christensen advocates an understanding of how the open strings resonate:

> It absolutely astounds me that people could play the violin for years and years and years and years and not realize that when you play a G, your G string is supposed to vibrate. They have no idea what to listen for. They have no idea that the best teacher of intonation in the whole universe is right there in their left hand.

Christensen's students learn that through natural sympathetic resonance, the open strings vibrate with notes that are a fifth apart, a fourth apart, an octave, and unison. If a first-year student has apparent intonation issues, Christensen often uses the Sitt (1907) exercises in second position. He stated, "This is a trick that I do with somebody who thinks they can already play the violin and they don't like second position." Through this approach, students simultaneously work on note reading and make connections between the notes that should be vibrating with the open strings. Christensen further explained the benefits of these exercises:

> They are out of their comfort zone because they are not in first position anymore. I can fix their left hand position, because it is totally alien what they are doing in second position–it's like speaking Greek. So I can fix a lot of things in second position, and then when we go back to first position, they can transfer because

> they have already had this experience. And usually–as long as a kid can hear–as long as there is some sort of sense of understanding this natural intonation . . . it starts to fix itself really, really quickly.

Through this approach, students quickly develop critical listening skills and hear the increased resonance of their instruments. Christensen claimed that these moments of self-discovery inspire him and make the isolation of his job worthwhile.

According to Ngai, there are students who have good ears and lazy fingers, and others who do not have good ears. For those who do not have good ears, he strives to make them sensitive to the ringing tones of the instrument. Ngai encourages his students to make "any note that [they] are playing on the instrument . . . sound like an open string–to achieve that open string quality wherever [they] are . . . really vibrant quality to [the] tone." Ngai implements an exercise devised by Fischer (1997, 2004), where his students play a scale and choose certain notes to tune first by skipping selected notes. As they play the scale, all tonic notes have to match, and then they systematically add the dominants, the subdominants, and the remaining thirds, sixths, and sevenths. There are certain notes, such as the third of the scale that can be pushed higher or lower depending on the harmony. Because of the subjective nature of tuning certain notes, Ngai encourages his students to think harmonically rather than linearly.

Technology and smartphone applications. With regards to intonation, Wolcott has a creative pedagogical approach through the use of technology. Wolcott stated that he is a "big believer of drones," and often blasts them through large speakers in his studio while his students play their scales. In addition to drone tones, Wolcott downloads various technological applications for his students to work on their intonation. On his

mobile device, he has *The Amazing Slowdowner* (2015), which slows down the rhythm without altering the pitch. The website *piano-accompaniment.com*, allows students to listen to the piano accompaniment minus the solo part. In conjunction with the piano accompaniment, he uses *The Amazing Slowdowner* (2015) application so that students can practice, for example, Mendelssohn *Violin Concerto* with piano accompaniment at a slow tempo. Wolcott (2009) uses his blog as a means to share his creative experimentations with technology in violin instruction. Similarly, Niles (2010) describes Wolcott's inquisitive spirit and pedagogical approach in his blog:

> [Wolcott] uses piano accompaniments from *piano-accompaniments.com* and can render them at any tempo–with no degradation of pitch–with the help of *The Amazing Slow Downer* software. . . . Bill isn't just an aficionado of new technology; he loves the old stuff, too. In his small studio, with its walls covered with black and white photos of Eugene Fodor (who mentored Bill), Anne-Sophie Mutter, Heifetz and more, is an old-fashioned turntable that plays the big vinyl records.

Wolcott (2012) has an "approach that instills a sense of confidence and provides a strong foundation for future challenges in all aspects of life." He believes that the innovative use of technology positively affects the learning processes of his postsecondary students. In a similar fashion to Wolcott, Gillham encourages his students to download the *Cleartune* (2008) application for their smartphone devices in order to compare their intonation to the highly sensitive tuner.

Awareness of distances and lazy ears/fingers. According to Ngai, students who have "good ears but lazy fingers" need to understand the distances between semitones and whole tones in order to avoid the following issue:

> The fingers are sort of half doing a semitone here or half doing a whole tone here. It's clarifying it, and without saying, "This is in tune" and, "This is out of tune." It actually fixes the intonation [because] they are thinking about relations, rather than exact pitches. I think that's one of the biggest things my teacher used to tell me: think in relative terms and things will be in tune; think in absolute terms and things, part of the time, may be in tune and, part of the time, may be out of tune. Intonation is a relative thing no matter what you do, whatever you are playing.

Ngai has a literal approach to intonation and encourages his students to have an awareness of exact distances and relations between pitches. Similarly, Dalbec-Szczesniak addresses intonation issues through "measuring, measuring, measuring–the three things to help you play in tune." She views left hand passages through patterns and exact measurements, and explained the following approach:

> It's really listening for the whole tones and semitones when they're playing their scales and making sure they feel the sameness between a finger that is going a semitone . . . feeling the difference between the semitone and the whole tone . . . and just being aware of that distance so that, eventually, they recognize it as a measurement . . . an inch or two. . . . I always tell them about how when they go up and down steps, do they really have to think about where they need to put their foot next? What kind[s] of steps trip you up? It's usually steps that are uneven or not the same height. But generally, steps are spaced a certain distance–it's

> universal–so you don't have to look anymore. You know exactly what the distance is to raise your foot. I try and stress that if you notice what distances you are moving, either from finger to finger or from position to position, these are patterns that repeat themselves over and over again. You can rely on them if you trust that they are going to be the same.

Through scale practice, Dalbec-Szczesniak stresses the importance of viewing notes in patterns and chunks instead of as individual notes. Both Auer (1921) and Flesch (1939) advocate understanding the relationship between fingers through scale practice and measuring the fingerboard (Stowell, 1985). There are a finite number of patterns that the four fingers play on the fingerboard, simply in different combinations and permutations.

In a similar fashion, Gilman, Clapp, and Bargerstock have experienced issues with their first-year students' critical listening skills, possible laziness, and lack of understanding distances. Gilman claimed the following perspective:

> It's very clear that most of us–unless we are in the top one and a half percent echelon– suffer from intonation problems. We begin to hear that we are playing in tune when, in fact, we are not, and that's a very difficult concept to get across.

As a result of this issue, Gilman advocates effective practicing and critical listening. He decreases the potential for laziness by not allowing students to rely solely on his feedback. Clapp stated that although students at The Juilliard School must have good intonation in order to win the audition, they sometimes become lazy and do not listen as diligently as they could. Bargerstock addresses this issue of laziness in critical listening by taking a physiological approach to intonation. She has a large, scientific picture of an ear in her studio. From this picture, she encourages her students to understand the

"sensation in the cochlea of the combination tones," in addition to drone tones, and the difference between perfect and imperfect intervals. According to Bargerstock, when students understand the physiology of the inner ear, the experience becomes real.

The participants believe that intonation issues originate from a variety of deficiencies, including: a lack of ear training in the early stages of learning, left hand tension, a failure to recognize measured distances, or lazy ears. To address these issues, they create harmonic contexts through drone tones, experiment with smartphone applications, inform students of the types of intonation, examine exact measurements or distances between the fingers, and promote critical listening.

Technical and Psychological Strategies in Addressing Vibrato Issues

Most of the participants believe that vibrato is the most difficult technical/musical concept to teach because it is subjective in its execution. Vibrato is used to enhance artistic expression and can be difficult to verbalize through physiological explanations. Many of the participants utilize a systematic approach and view vibrato technique in terms of pitch and exact oscillations. By contrast, other participants believe that if the vibrato is working well for students, they leave it alone.

Scientific approach. Lewis examines this technical concept last because vibrato is affected by posture and tension. His pedagogical perspective on vibrato was influenced by DeLay during his undergraduate studies and still affects his teaching. DeLay erased the definitions in his mind of where his vibrato was being generated, so that he could only focus on the vibrato in terms of pitch. He explained DeLay's pedagogical approach:

> Half a pitch underneath the note is a whole half step! That's a huge, wide vibrato. We did half a pitch, quarter of a pitch, eighth, sixteenth, thirty-second, sixty-

> fourth, and pin head which is actually moving your finger up and down on the string, not back and forth. So that was wonderful for me because I was too caught up in the definitions of where it was being generated from, that I couldn't really listen to what is important–which is what it sounded like.

As a result of Lewis' educational experiences, his students develop the concept of pitch in terms of its width and speed, without focusing on the actual vibrato. All of Lewis' students are required to work on their vibrato, in order to further develop and enhance their technique. If students have a beautiful vibrato, Lewis then encourages critical analysis to discuss why certain musical decisions affect the line. As a result, Lewis claimed that students "become very cognitively aware. A lot of it has to do with awareness and then assimilation. We assimilate that concept after we are aware of it." As first-year students become cognitively aware of their vibrato in terms of pitch and musical decisions, Lewis then addresses how the vibrato fits into the musical context and how it coordinates with the right hand.

Similarly to Lewis, Christensen does not discuss vibrato with his first-year students until they develop an increased resonance in their sound, an understanding of finger patterns, and note names. He often incorporates vibrato work into shifting exercises, without telling the students that they are working on their vibrato. He encourages his students to slide up and down the fingerboard in large glissandi in order to create flexible joints and then, gradually minimizes the motion so that the finger stays in one place. Christensen believes that an arm vibrato is the easiest for students to grasp because it "creates the fewest unintended consequences." He stated that if they only

develop wrist vibrato, "they will never have an arm vibrato, and it will limit their colours."

Depending on the student, Wolcott stated that he usually starts with an arm vibrato, then a wrist vibrato, and lastly a finger vibrato. Rolland (1974b) claims that the most successful vibrato includes all parts of the arm, and that "the fingers, the hand, the forearm, [and] the upper arm all participate" (p. 162). Galamian (1999) also advocates a combination of vibrati, and states the following about the use of colours:

> The variety resulting from the combination of [the] three types [of vibrati] gives the performer a far wider range of coloring and expressiveness and a more personal tone quality. . . . The vibrato coloring is, fundamentally, a matter of personal taste, but this personal taste must never lose sight of the requirements of musical style. (pp. 37-38)

In order to develop rhythm and colours in the vibrati, Wolcott uses the metronome at various speeds and randomly calls out different note values. For example, he could put the metronome at M.M. = 84, and say, "Third finger on A string; quarter notes, eighth notes, sixteenth notes, quarter notes." He could then move the metronome up or down to fluctuate the speeds. Wolcott added, "I think vibrato . . . is a matter of will. I tell my students that is what separates . . . the players from the non-players . . . if they really want it."

With every student, Bargerstock strives to find a vibrato that is the most natural, and then works to develop consistency and evenness. She encourages her students to engage in small, specific vibrato exercises every day to continually reinforce the mechanics of the motions, so that they "go through different facets of training the

vibrato–but only five minutes a day. They are limited–no more!" She also has various handouts scanned so that students can open their laptops in the practice room and choose different exercises to practice every day. She explained the following vibrato practice strategy:

> I tell them to pick a different portion or segment of the ideas–a different technique every day. They will do either an accelerated method on four selected notes–just a first finger note, a second finger note, a third finger note, and a fourth finger note . . . in the fourth position on the A string. Then I invite them to try different parts of the fingerboard–so that's one idea. Then they could take all the notes of an ascending scale, and play one level of the accelerated–like four pulses per beat with the metronome . . . and then to get one finger passing into the next. I suggest it be very slow, so that they get the rocking motion and transfer the finger with the upstroke of the vibrato–it gets pretty specific. Then we do crescendo, zero to 60, diminuendo, 60 to zero on whole notes [and] on notes of the scale. Then they are supposed to trade it out: the one thing on Monday, the next thing on Tuesday, the next thing on Wednesday, [and] back to the first thing on Thursday.

Although the exercises are explicit, Bargerstock leaves the responsibility and choices to the discretion of the student. Bargerstock's strategy of using small exercises within a limited amount of time develops metacognitive awareness in the practice room.

In addition to Bargerstock, Huang, and Clapp have a systematic approach to vibrato and often use the exercises passed on to them from DeLay. Huang puts the metronome at M.M. = 60 beats per minute, and through a motion generated from the wrist, each finger completely flattens to a quarter tone below the centre of the pitch.

Clapp stated that although most students winning the audition at Juilliard have successful vibrato technique, he often had to address widths, speeds, and expression in a specific manner. Clapp viewed vibrato technique in a systematic way, where each oscillation was an exact distance of measurement:

> Vibrato is a real problem to talk about. [When] people have [an] arm vibrato and it sounds good and it works, and they are not making themselves paralyzed by too much muscle tension–I don't mess with it–but I talk about the fingertip. There is a pinpoint centre–which is the balance point of the finger–and from that balance point, vibrato can go a quarter of an inch in each direction or an eighth of an inch or a sixteenth. One way of controlling vibrato is by thinking about the fingertip and how far it rolls. Of course, the whole subject of vibrato has to do with expressive playing: where you use the wide vibrato, where you use the narrow, [and when] you're ending a phrase, you taper off.

With his students, Clapp focused on the mechanics of the vibrato motion first, and then, encouraged musical expressivity through a variety of widths and speeds. Rodrigues (2009) claims that "the vibrato tone of the present day [has been] analysed as a physical and technical process, and taught as an oscillation per second in the left hand, which can be mathematically calculated" (p. 82). According to Cheslock (1931) and Seashore (1932), artistic vibrato has measurable qualities: the vibrato is regular, the speed and width are even, the vibrato fluctuates by a quarter tone down from the pitch centre, and there is an average of 6.5 vibrato cycles per second.

With his first-year students, Ngai first focuses on the resonance of the instrument and encourages nonvibrato practice. When the students focus on the instrument and bow

vibrating, they "feel the sensation and also develop a sensitivity in that finger . . . for really capturing that vibration, because the vibrato is then something that just amplifies that." According to Ngai, if there is a natural vibration that the student is trying to enhance, the finger and knuckle become instantly freer. He claimed that "starting without vibrato with just something beautifully in tune, beautifully resonant . . . is a gold mine." Similarly, Capet (1916) advocates nonvibrato practice in order to master pure intonation and tone, and states that violinists frequently misuse vibrato: "The omission of the left-hand vibrato . . . enables us to evaluate correctly all those base expressions produced by the vibrato of the left hand" (p. 64). Auer (1921) also claims that vibrato is an embellishment and is often overused by violinists to conceal poor tone production.

Ngai then incorporates exercises that work on the "wiggles" or impulses of the knuckles, through dotted rhythm exercises and fast and slow rhythmic patterns alternations. Ngai encourages his students to listen critically to the tone and pitch when vibrating, so that the oscillation always goes from the pitch centre and below the note. He explained, "The oscillations that are not the impulses are basically rebounds," so that the student does not physically vibrate every single oscillation, but "sort of kick[s] it every so often to keep it going." In a similar fashion, Galamian (1999) states that vibrato must start from the pitch and move backwards, and "for the initial steps, it is good to start with an exact number of pulses per beat: two motions, then three, four, six, then more without counting them" (p. 39).

Personal musical approach. Gillham, Bargerstock, and Gilman believe that vibrato technique is a personal issue and that all violinists have their own natural vibrato. With their first-year students, both Gillham and Dalbec-Szczesniak try to leave it alone as

much as possible, unless there are issues where they are oscillating above the pitch, the vibrato is not rhythmical, or there is too much tension in the hand. Regardless of where the vibrato is generated, they encourage their students to keep the first joint of their fingers supple and to develop a variety of widths and speeds. Dalbec-Szczesniak explained her students' lack of vibrato technique knowledge:

> A lot of kids come around and they think that a vibrato should be sort of above or around a note. I have to explain often that this leads to playing sharp when you vibrate above the pitch because the ear will kind of drift that way. The idea of vibrating below a pitch and up to it can sometimes be a novel idea.

Dalbec-Szczesniak believes that many of her first-year students have not been informed about basic vibrato principles in their prior studies. As a result, basic concepts become novel ideas or moments of self-discovery for many students in their postsecondary education.

Gilman believes that vibrato is a personal issue of musical expression that students are responsible to develop. According to Gilman, many first-year students do not receive basic knowledge about vibrato in their preuniversity studies. When students begin their postsecondary education, it is often difficult for them to think about their vibrato in a different way because it is automatic:

> [It is] difficult for students because once they fought so hard to get vibrato . . . they are comfortable with it. They are not even listening to it–when [it is] appropriate to be faster or slower–that's like a whole new concept to them.

Gilman is not concerned with whether his students use an arm vibrato or a wrist vibrato, but instead focuses on how they use the vibrato to their best advantage.

The participants have varied perspectives on vibrato because it is a personal tool of musical expression. Some participants discuss vibrato in a systematic manner, through specific measurements and oscillations. Others view vibrato as a personal, subjective form of expression and discuss the technique in terms of musical decisions.

How Postsecondary Violin Instructors Implement Remedial Practices

Evolution of Remedial Pedagogy

Through personal teaching experiences, the participants have acquired a greater awareness of the rehabilitative pedagogical strategies that have been more successful with students than others. Over time, their pedagogical approaches to rehabilitation have evolved through technical/musical discoveries.

Wisdom, effective communication, and patience. Throughout Clapp's 59 years of teaching experience, he gained an awareness of appropriate remedial repertoire and the technical/musical thresholds of his students. Clapp stated that he learned valuable lessons from the mistakes that he made early in his teaching career with regards to repertoire assignments:

> I try not to assign music that is not too hard for the kids. That's the mistake that I made early on. I was aware of the music that I had played, and when I first started teaching, I'm embarrassed to think about the things that I assigned to kids.

Lewis also stated that when he first started teaching, he was "much more uptight" with respect to remedial work. He was stern and impatient in terms of wanting instant results with his postsecondary students engaging in rehabilitation. He claimed the following about his present teaching:

> I am much more patient, and much more quick to assess ways in which to best reach [a] student . . . because there is not just one way to talk about vibrato to figure out what is going to affect the most amount of change and be important to that student.

Lewis believes that over the last 20 years, his ears have developed and he has learned how to communicate with every student to affect the most amount of change. He added, "Ms. DeLay was a master at this . . . she could say one thing that fixed five." This notion of effective communication is imperative to both Huang and Wolcott, as they strive to connect with every student through personal, creative interaction. Huang stated, "With every kid, you have to explain things differently even though you are explaining the same thing. So you can't really use the same words . . . because everybody has a different way of perceiving things."

Similarly to Lewis, Ngai, Christensen, Bargerstock, and Dalbec-Szczesniak stated that over the years, they have become more patient and sensitive to the physical and emotional circumstances of their students, while striving to maintain a love for the instrument. Christensen stated that early in his teaching career, he sought to follow what he had learned in teacher training and refused to proceed to new etudes or repertoire until certain skills were mastered. Christensen realized that this approach increased the potential for injuries because every student has a different physiology and library of habits. He believes that, at the present time, he is more flexible in letting things go for months or even years, because he wants to maintain the students' love for music. He explained:

> I don't want to kill the love. . . . Everyone is different, so the approach should be a little bit different for every person . . . but that approach is informed by the strength of my convictions about what is really important. At the end of the day, there are certain things that have to be right at some point–maybe not today, maybe tomorrow, maybe next month.

Christensen is mindful of how he approaches remedial work with every student, to ensure that they remain motivated to continue pursuing music in their postsecondary studies. If a first-year student is emotionally unstable, he refuses to let them leave the lesson believing that they are incapable of playing the violin. Similarly, Dalbec-Szczesniak understands that her students have varied circumstances and career goals, and that the joy of playing the instrument is a priority:

> I'm a little bit more inclusive of other ways of doing things–like, there is no one perfect way of always doing things. I think that's maybe a maturity thing. After you have taught for so many years, and have taught all ages, and all types of people, you realize that it's not necessary for everyone to achieve the same result or same outcome. Sometimes you are better to just let things go . . . you don't want to turn them off entirely to playing. And if it's a joy for them . . . not to force an issue. . . . My approach has changed a little bit there.

Dalbec-Szczesniak believes that over time, she has gained wisdom in knowing how to approach tasks in a variety of ways, depending on the student.

Life-long learners. Both Gillham and Gilman believe that learning is a continual process for themselves and their students. Gillham encourages his students to reevaluate

their playing regularly so that they are being rehabilitated at all times: whether it is technical, musical, or psychological. He stated the following perspective:

> I am constantly learning from my colleagues and my students, so as I learn new things, I share them. I explore them with my students, and I look forward every summer to teaching at various festivals–seeing other people teach, meeting people I have never met before, and watching them teach. It is constantly evolving. At the same time, I think I am sort of in a refining mode now. I've got all of this information and I'm learning, at least for myself and for my students, which aspects of the rehabilitation process work better than others and why. I think that, as this process evolves, maybe the material that I use will gradually get a little bit smaller and more focused.

Along with his students, Gillham is evolving and growing as a violinist. In a similar fashion to Gillham, Gilman constantly reevaluates his approach to the instrument by attending professional development seminars and workshops.

Through the evolution of the participants' rehabilitative pedagogical approaches, they have acquired valuable knowledge and expertise. Although they cannot anticipate the emotional and physical circumstances of their students, many of the participants are more aware of how to effectively communicate with their students and how to address correction while maintaining their psychological wellbeing. Others have evolved, in the sense of being self-acknowledged life-long learners, to the point where the experimentations and technical/musical discoveries never end.

Psychology of the Student

Through many years of teaching experience, the participants have had the opportunity to modify their pedagogical approaches to rehabilitation. Many participants have acquired greater sensitivity and success in communicating their technical/musical intentions to their students. Others share their own personal remedial experiences with their students in order to make an emotional connection.

Communication and emotional sensitivity. As a result of some negative psychological experiences that Lewis endured throughout his own studies, he approaches rehabilitative pedagogy in a positive way. In his teaching, Lewis is aware of his communication, use of words, and judgment. He explained:

> For our students to have the concept that we [need] to correct something that is "bad" in their playing, it causes kids to have a psychological issue, unfortunately, that ties to [their] technical issues. So I try to separate them out and I try to separate judgment out, because oftentimes kids can say, "That wasn't in tune," but they are thinking, "I am a terrible violinist. I am a terrible violinist. I must not be a good person." So I do find that there are psychological things.

Lewis strives to discover how every student absorbs spoken word because they all do so differently. Lewis referred to this as the "psychology of words," and believes that how he speaks to a student affects the results that he receives as the instructor. In a recent YouTube video, Lewis (2010a) stated, "Mentoring is a very big part of being a great teacher," and described the following difficulties that students face in postsecondary music study:

> Violin is one of those things that you have to do well before you get to college. You have to play well before you get there. That's something that's very specific to our profession. If you go to law school, you're not expected to have been a lawyer before you get there. But if you go to music school, you are expected to have done a whole lot of practice and a whole lot of things that give you performance experiences . . . and a level of polish, also.

According to Lewis, students studying music at the postsecondary level endure high expectations, and violin instructors should demonstrate sensitivity and patience as committed mentors.

In addition to the effects of spoken word, Lewis believes that the first lessons with first-year students are crucial for establishing trust and a personal relationship with the instructor. The first few weeks of undergraduate studies are often emotionally taxing for students, and he stated the following about his role as an instructor:

> You are really building a rapport with that person, and the more that you show that you are involved in the process with them, the more I find that they are successful at it. The more detached they feel the teacher is, I find the more that they are detached with the learning.

Lewis believes that when students trust him, he can be more direct in his speech without them being negatively affected. He stated, "They know if I say, 'This is out of tune,' that they are not thinking that I think less of them. Lewis claimed that many of the psychological issues that his students face in postsecondary education stem from unsuitable early instruction or an emotionally negative teacher:

> It is essential that kids have positive experiences growing up through the learning process, or else, you end up doing nothing but rehabilitation for years. I think that if there is one thing that I can always see from my kids that are coming in, is that ability to look at a situation and be able to separate themselves out from it, and not just feel terrible about the process. I get those kids thinking about the process, that it is positive, and then once [their] brain is in gear, if [they] want to work, [they] want to work. . . . If [they] feel like [they] can't do it, [they] don't want to practice–[they] don't feel successful.

Lewis stated that young students who lack the appropriate instruction and environment in their early studies face the potential for rehabilitation and psychological issues in the future. He often reflects on his personal experiences from childhood, and understands the importance of emotional health and wellbeing.

Lewis instils in his students that the learning process is positive and encourages them to share their art with others, in order to see past themselves and their postsecondary stresses. He often brings his students to play for underprivileged children or children in psychiatric wards, and stated, "Where you put our third finger becomes a little bit more in perspective when you are going and dealing with someone who is fighting just to try to live and survive." Lewis focuses on what is important in life and tries to instil patience in his students throughout their development. Teaching patience is difficult, as Lewis claimed, "I don't know any violinist who is really 100 percent patient all the time with themselves." Lewis understands this challenge, because as an avid performer, he endures the rigorous physical and psychological demands that are an inherent part of the profession.

Clapp was aware of the psychological wellbeing of his students when engaging in corrective pedagogy and believed that effective, open communication was imperative. In his studio handbook, Clapp (2012) states the following regarding communication:

> Tell me if my explanations are unclear or if you don't understand what I am saying. Tell me if you want more specific information, either musical or technical. Tell me if something about your playing bothers you and you want to explore solutions. . . . What I suggest may not be better than you're already doing, just different. You, not I, will decide how you want to shape a piece. (p. 2)

He attributed this approach to his studies with DeLay, as she was sensitive to the needs of her students, communicated with their self-worth in mind, and invested in their lives. Clapp further explained his pedagogical approach:

> I try to sense when they are feeling beaten down . . . so I back off a little bit and give it more time. I guess that is one of Ms. DeLay's legacies. She introduced new thoughts and if it just didn't come in two or three weeks, she just dropped it and she would come back to it in three months.

This was a fundamental strategy for Clapp when implementing remedial pedagogy because he wanted his students to persevere through the process and remain motivated. Although it is often difficult to remain patient throughout the remedial process, Auer (1921) states that students should recognize their personal strengths and weaknesses, and choose repertoire accordingly to increase their self-worth as violinists.

As students go through the remedial process, Gillham and Wolcott ensure that their students detach themselves psychologically from their deficiencies and understand that the issues are not a direct reflection of them as a person. According to Wolcott, some

students are able to disassociate themselves from a situation and take stronger instructions because they are not emotionally affected by the information. They see it as constructive knowledge that can help them improve. Other students may be more sensitive to their abilities to perform and need approval from their instructors to feel worth in themselves. Wolcott follows the Galamian principle that "you have to know who to be hard on and who to be encouraging to." Galamian (1999) explains this pedagogical principle:

> The teacher must be a good psychologist. He must beware of discouraging the student, and he must know that there are times when it is advisable to correct certain things and times when it is not advisable to do so. . . . Above all, the teacher must not try to do too much at once. The ability to digest new things is limited with everybody, and an over-ambitious attempt on the part of the teacher to apply too many cures simultaneously will yield negative results. (p. 106)

Through Wolcott's studies with Fodor, this pedagogical principle became a part of his teaching. According to Wolcott, Fodor was aware of his psychological wellbeing, and explained, "If you don't have anything to prove, then you may be more willing to help someone else. I think that teachers oftentimes display their knowledge rather than actually try to help somebody, and a lot of times it's subconscious."

Ngai believes that first-year students often feel demoralized throughout the remedial process, because they constantly compare themselves to their peers and face demanding postsecondary expectations. Flesch (1930) states that performance anxiety is connected to technical weaknesses, and recommends that confidence, belief in one's ability, focused study, and inner strength help to combat the symptoms of anxiety.

According to Ngai, when students implement the remedial work that is required of them, they reach their goals sooner and are much happier. In terms of psychology, Ngai strives to look at the big picture:

> Whether or not they become musicians professionally, or whether they become teachers or performers, they will be much happier. I think the bigger picture is more important than feeling like they are progressing in the first semester or the first year. That's a very hard thing to communicate and make them really appreciate. . . . They are thrown into a situation of specialty–of specialization–and the levels of expectation that are put on them. They feel like they need to meet these goals, and rightly so, but I think learning an instrument is never finished.

Ngai believes that students often want instant gratification when, in reality, the life of a musician is a process of continual striving, where one never attains perfection. According to Ngai, postsecondary studies are a "time period of specialization and polishing and total commitment in order to allow you to further develop on your own," which can be a difficult concept to communicate to young first-year students.

Through Lewis' studies at Juilliard, he gained an awareness of the inherently competitive nature within the music studio. He stated, "It is something that we are programmed unfortunately for, that I try as much as possible to de-program, if you will, our students so that everything isn't about competition. It's possible to be happy for somebody else." Although Lewis claimed that students form mental blockages through the constant comparisons, he believes that "[students] really remember . . . the personal communication and interaction with their teachers. . . . It really humanizes what we are

doing in a very competitive environment." Lewis stated that in his studio syllabus, he lists his expectations for his students in terms of being "good colleagues."

Through remedial work, Huang maintains the psychological wellbeing of her students by enhancing what they already do well. She strives to gain the trust of her students, so that when they need to work on a specific skill (e.g., spiccato bowing), they view the remedial work as enhancement:

> I think the challenges are really just their attitude, feeling like, "I'm already playing *Zigeunerweisen*, why are you complaining about my spiccato?" And it is good–but it could be better. And then some kids, they just don't see the value of learning their spiccato in a more thorough way–starting from the beginning stage. And actually, it won't take them long, but they have to go through some etudes and be willing to do that and practice. . . . That is really the biggest challenge when you face resistance like that.

According to Huang, the remedial process can be psychologically damaging for students who have a poor attitude, who believe that they are above remedial work, or had prior instructors who did not address correction in the appropriate manner. Huang also stated that remedial work is easier to implement with younger students as opposed to postsecondary students because "when they are younger, it is ok that they are not at the very best . . . somehow they are not so ashamed of themselves." Although this challenge arises with her postsecondary students, Huang emphasizes that remedial work is simply a review, and that if they trust her, they will improve.

The participants are aware, through their own personal experiences that rehabilitative pedagogy is more difficult to endure psychologically than physically. The

participants strive to effectively communicate with their students, encourage patience, nurture a sense of trust, and create a nonjudgmental studio environment. In addition to the personal psychological stresses first-year students endure throughout the remedial process, they are also expected to perform in studio class and prepare for juries/recitals. The pressures of having to change technical deficiencies often result in performance anxiety and feelings of inadequacy within the expected postsecondary timeline.

Pressures and Adjustments in Postsecondary Education

The participants believe that first-year students vary in their abilities to adjust to new surroundings and cope with the stresses of postsecondary life. In addition to academic classes, orchestra, master class, and recitals/juries, many first-year students engage in remedial pedagogy. Many of the participants stated that the psychology of the student becomes a significant aspect of the remedial process not only in terms of violin playing, but also in life.

Coping with academic and social pressures. As students endure the psychological challenges of postsecondary life, Dalbec-Szczesniak believes that the social support of peers within a string studio is imperative. She explained her experiences as a first-year student:

> I find that if they take ownership of themselves–like their body awareness and their self-critical thinking–that they become more empowered by it. . . . I have to say most 17-year-olds come in and don't really have a clue what is going on, and I think it has to do with just everything spiraling in different directions at that age. It's rare that somebody comes in and feels what it is that I'm trying to get them to feel right away–it's usually not there. . . . I was 17 when I went to the University

> of Toronto, and I came from a small town. I was completely overwhelmed by everything, and really didn't understand what I was doing with the violin until much later–third or fourth year is when I really started to work at it the way that I should. It really was a big period of adjustment and finding out where you are as a social being–all those things. I don't think that is unreasonable and certainly expect a lot of adjustment at that period. . . . A lot of them start out really "gung ho" and then things start to load themselves on and they become overwhelmed pretty quickly–and I find that I have to lay off.

Through her own experiences, Dalbec-Szczesniak understands the pressures involved with remedial work, and trying to find a niche within the social world of postsecondary life. As a violin instructor, she believes that it is her responsibility to know when her students are feeling discouraged or overwhelmed when the expectations arise.

Lewis believes that rehabilitation can come in many forms as first-year students adjust to postsecondary life and cope with new surroundings. Lewis (2010b) stated in a YouTube video that first-year students feel like "fish out of water. Mommy and daddy aren't there, [they] have to cook [their] own food, [they] have to deal with a roommate for the first time, [and] figuring out when to practice can be tough." In order to combat these challenges, his students are given a structured five-hour practice routine of solo Bach, etudes, scales, basics, and concerti. As a violin teacher, Lewis believes that there are many ways that he can help his students reach success in the practice room and in their lives:

> Part of my job as a teacher, I have to make my freshmen successful. I want them to have a successful first year of college. They have to adjust to a new roommate

> . . . I taught [one student] how to do laundry.

According to Lewis, violin playing is a small part of his holistic responsibility as a violin professor.

Meeting postsecondary deadlines and expectations. Ngai believes that the expectations in postsecondary education are often daunting and overwhelming for first-year students. There are many goals and requirements that need to be met, and Ngai often has to compromise in order to "teach to the goal." For example, if a student is not able to execute a long slur effectively, he will break the slur up into two or three bows so that it will sound better, although it may not be the most effective musical decision. Ngai raised the following questions:

> Is it more worthwhile in trying to find the technique that will make [the student execute the slur successfully], or is it better to just make it sound good [through a] shortcut? You make it sound good in the short term, but where does that leave you? The next year, you come across a certain situation, what do you do? You don't have the technique to actually do the long slur because you haven't developed that technique–but, at first, it sounds much better, and what counts? Sounding good and being successful in performance or continuing your search to find what is musically probably more intriguing? It's always a balance. You're always trying to keep that in mind.

Throughout the remedial process, Ngai stated that his students often become frustrated when they work on specific skill for a length of time without any marked improvement, while trying to meet degree deadlines. Similarly, Huang stated that she often feels pressured into giving students repertoire that is too difficult for their juries or recitals,

when she would prefer to take more time to work through remedial repertoire. She explained this challenge:

> Unfortunately we have to compromise. Sometimes a student comes in and really loves learning something that is very flashy–and that's not necessarily a bad thing–but I would usually try to compromise with them by giving them something very basic, such as Kreutzer (1963) No. 2. . . . Sometimes I have to negotiate, and this is difficult. If I had my way, I would love to keep them a little longer on basic etudes.

Huang often feels conflicted when trying to meet the needs of her students throughout the rehabilitation process, while still maintaining their motivation to learn remedial repertoire. According to Huang, many students believe that they do not need remedial work, despite her best intentions. In situations such as these, Huang carefully communicates her intentions and negotiates in order to maintain their self-efficacy and incentive.

In addition to the challenges of resistance and negotiation, Huang claimed that her students lack metacognitive awareness and time to apply the remedial concepts on their own while practicing. She stated that first-year students have demanding academic and orchestral commitments, and require a lot of reinforcement when implementing the remedial work. She explained her frustration:

> You have to meet deadlines, so there are problems [when] they spend time practicing their Kreutzer (1963) etude, but don't know it well enough to apply the concept. I still have to remind them, "Remember you did this in Kreutzer No. 2. Now use it for this passage here." And, of course, after I tell them, they are better,

> and they feel good–but I don't know how long lasting that is. I guess it might be because I am not teaching at a conservatory level, so I don't have a lot of experiences with the kids who have so much more independence in that sense. They still need a lot of instruction.

According to Huang, her first-year students require guidance and assistance with their time management skills and metacognitive analysis of remedial work, amongst the demands of postsecondary commitments.

Many of the participants believe that they do not have enough time to methodically work through the process of rehabilitation because of strict institutional timelines. In addition, students equally feel the pressures of having to produce the rehabilitative changes, adapt to new surroundings, take academic classes, orchestra, and successfully perform at their artistic best. According to the participants, this stage in life is often overwhelming and psychologically daunting for many first-year students. Challenges not only arise with students throughout the remedial process, but also with instructors.

Challenges with Remedial Pedagogy

According to the majority of the participants, rehabilitative pedagogy can be counterproductive if students exhibit physical or psychological blockages, low self-esteem, or resistance to change. By contrast, some view rehabilitation as a necessary part of postsecondary education and have the perspective that the learning process never ends.

Physical and psychological blockages. Lewis, Christensen, Gilman, Bargerstock, and Ngai believe that rehabilitative pedagogy can be counterproductive for some students if there are physical, emotional, or psychological issues that block the

process. According to Lewis, remedial pedagogy becomes counterproductive if the student feels worthless as a violinist:

> Even though the stuff you may be working on is completely positive and is going to change their playing, sometimes at the collegiate level, if they feel that they can't do this, and they can't do that, and they can't do this, and they need to change these 18 things, it's psychologically, "Why am I doing what I'm doing?" Or it makes them question, "I must have been a terrible student," or "I must have had terrible teachers growing up." I think that as we give criticism to students, it needs to be in a way that it still motivates them to be able to want to work on the things that you are pointing out to them. If we don't, then all you are doing is creating a violinist who feels that the only thing they know about their playing are the inadequacies, not what they do well. I've never heard any student in college that comes, that didn't have something of value in their playing. They may need a lot of remedial work, but there is something. So I always try to hold on to something that is original in their playing as we work on their remedial work.

Throughout the remedial process, Lewis remains positive and acknowledges the special qualities in every student's playing. He claimed that many students can only focus on their shortcomings, instead of celebrating their successes throughout the process. In order to overcome this challenge, he views every situation as a learning experience. This strategy has affected his pedagogical approach to correction throughout his teaching career.

Both Lewis and Christensen have experienced some frustration with students whom they claimed could not translate their musical ideas through their technique. Lewis

explained that these students often have great ears, but they are not "able to translate quickly what they see." In addition, these students do not have the following:

> [A] hierarchy in their own thinking and playing about what the difference [is] technically about playing appassionato, or espressivo, or tranquillo, or dolce and what order those words go in, and what you do to basically get that type of change.

With these students, too many choices become overwhelming, especially when they undertake a task that is too difficult and feel unsuccessful. Christensen finds that his most frustrating teaching moments occur when he tries every possible angle to relay the correct information, and minimal changes occur because the students are trying too hard. According to Gilman, some students are not willing to go past their comfort zone and fail to acknowledge reality:

> The realization of a player's present condition–in other words, of reality–then recognizing that . . . further weakens their feeling that they are doing anything well at all. . . . No matter how much rehabilitation you try to apply, they are so blocked from making any changes that nothing occurred in the end. They did graduate, [but] it took a great deal of struggle on their part and mine to get them to graduate, and they still have these problems down the road. They are trying to function in a professional manner, but people tend to ignore them more because it is recognizable.

Gilman stated that although this is a reality for some, these students are in the minority. Similarly, Bargerstock stated that when students have specific emotional blockages, she knows that the situation will not get better by pushing them, and they will simply "go to

the music." In discussing these challenging situations, Bargerstock claimed, "Never give up. Never give up on them, because those are the children that will be always trying. They will never be lazy. They want it so badly." These challenges inspired Bargerstock to become a better teacher because she had to adapt to a variety of circumstances and accumulate creative pedagogical strategies. Ngai has also had students with emotional issues, anxiety disorders, and manic-depressive disorders, which "cloud[ed] their level of concentration" with inconsistent psychological states. Ngai explained that these emotional situations are difficult, by stating the following:

> Catch them on their up swing. Give them enough food for thought and give them enough momentum to carry them through the days that they feel down. The days that they feel down in the lessons, you just have to say, "Well it's not a lesson about the violin now, it's about life." Then you are a counsellor rather than a violin teacher. But then I guess that's okay, because that's what they need at that moment.

Ngai is sensitive to the physical and emotional wellbeing of his students and tries to take an active role in their lives. He understands what is important in life, and changes his role as a violin teacher to a counselor, if needed on any given day.

Resistance to change and rebellion. According to Dalbec-Szczesniak, Huang, Wolcott, Gilman, Bargerstock, and Ngai, rehabilitative pedagogy can be counterproductive when students understand the information, but they are not ready to accept change or have no desire to change, they are psychologically unstable, or they have poor attitudes. This can lead to discouragement and even rebellion in the student. Dalbec-Szczesniak explained her pedagogical strategy:

> I often just say, "Well, I've said what I'm going to say. I think I've said it now for however many months or lessons or years or whatever. I'm not going to say it anymore. You know you have heard it all, so I'm not going to bug you about it anymore."

Dalbec-Szczesniak stated that when she faces resistance with rehabilitative work, she leaves the decision up to the student as to whether they want to make the change or not. Huang often uses the repertoire that the students enjoy playing and draws remedial tasks through the passages. She finds specific passages that involve detaché, for example, so that she can open up a discussion about detaché bow stroke. According to Huang, she is more flexible with her rehabilitative expectations than she was when she first started teaching:

> If they feel like Kreutzer (1963) No. 2 is not going to help them, then it won't help them. And so it is up to us. Part of our responsibility is to stay flexible, because eventually they will see the value of rehabilitation. But it may be through different channels, different ways.

Huang now realizes that students learn in their own time and make decisions when they are emotionally ready. Another instructor may lead the student to the realization that the issue should have been fixed earlier.

Gilman and Bargerstock claimed that difficulties often arise in convincing students who were predominantly self-taught that the rehabilitation will be beneficial. According to Gilman, many students who have natural left hand facility focus solely on repertoire development throughout their studies and neglect fundamental etude/scale

reinforcement. Gilman claimed that these students often resist addressing their technical issues or relearning etudes:

> I have had students who have come in, particularly in our area, who have a great deal of technique and like to play specific pieces that they have chosen on their own, but have none of the background of etudes and exercises and scales–yet they play very well. This is kind of a different problem to approach because it's difficult to get those students to go back and reassess their technique . . . while still trying to give them confidence to go on with what they're doing. . . . They are basically self-taught and they have achieved that level in their performance through their own means. So their question is always, "Why do I need this?" And then you get things like, "You know I hate etudes, unless you can find me one that I like." You are probably going to hear the same thing week after week.

Throughout the remedial process, Gilman makes pedagogical decisions carefully and remains receptive to the students' motivation to persevere.

Bargerstock stated that every year, the difficulties arise when she has to convince the first-year students that the rehabilitation will help them and that they can trust her throughout the process. Bargerstock explained this challenge within her studio environment:

> Well it's like propaganda when the freshmen come in. I have studio classes a couple of times per month, and the freshmen are watching the upperclassmen, and the seniors [are watching] the graduate students. They are preparing their recitals, and they are playing right at the beginning of the semester. They are already performing in class, they are voicing their opinions, and they feel like they have

> to climb on board because I have already convinced the upperclassmen . . . so I use the word "propaganda" in a positive way. It is positive reinforcement in that we are happy here–we are learning here. You are at point A, you are going to be at point B by the time you leave here, this is the way we are going to do it, and isn't the violin the best thing in the world?

Bargerstock strives to gain the trust of her first-year students through the presence and attitudes of the upperclassmen. She believes that when the environment is positive and encouraging, the students exhibit less resistance throughout the remedial process. Some easily fall in line, while others with more emotional insecurities take a bit longer to accept the information.

Necessary part of development. Although Gillham believes that students are always in a "refining" or rehabilitating mode, he stated that remedial work is counterproductive in master class situations or with transfer students because he does not have the time to reinforce the concepts. Gillham added that there are also "some students who don't seem to care. I won't ever give up on them. I would rather them switch to somebody else who is also not going to care, than to stay with me." According to Gillham, rehabilitation is a necessary part of being a postsecondary student and violinist, and his students are "all learning how to play the violin and they are all going through various rehabilitative things." Clapp had similar beliefs, and stated that rehabilitation was never counterproductive:

> It is always good, and primarily from the point of view of getting them to become their own teachers and for them to do the analysis of what needs to be fixed. There is always something that needs to be fixed–always.

If students resist, both Clapp and Gillham claimed that they would rather the student move to a different teacher. They both believe that rehabilitative work requires patience, perseverance, a will to change, and trust in the instructor.

Similarly, Ngai has had experiences where the rehabilitative pedagogy caused such frustration in students as a result of slow progress that they decided to switch studios. He believes that students have to come to terms with reality, acknowledge that they need to address certain issues, and invest the time required to meet their goals. Ngai claimed that students choose to study music in their postsecondary education, which is an intensive specialization:

> It is only four years out of their life, and it is intensive studies. . . . There is so much to learn . . . and they are allowed to concentrate on music, which is their area of specialty. They choose to do that. . . . In a way, it is a luxury.

According to Ngai, students who view their education through this perspective appreciate every step in their development. He stated that as an instructor, "You have to stick to your guns too. They need to do this, and they squirm about it." Ngai is firm in his approach to correction so that his students face reality and see the value in the remedial work.

Some of the participants believe that rehabilitation can be counterproductive for students if they resist the remedial information through rebellion, or have physical and/or psychological blockages. Some participants stated that remedial work is always necessary, while others take a different approach and make decisions based on the emotional wellbeing of the student.

Responses of Students to Remedial Pedagogy

The participants believe that first-year students demonstrate diverse, personal responses to rehabilitation. These responses are dependent on how correction was addressed in their prior education, their personality, their sense of self-efficacy, and their motivation to set personal goals. Some students may be inspired through the remedial process, as they accumulate new information and tangibly see and hear their improvements. Others may feel frustrated with the need to change skills that have been reinforced for many years and resist the remedial work.

Emotional investment of the instructor. Both Lewis and Christensen believe that a sensitive approach to rehabilitation and an emotional investment in the process yield positive results in their students. Christensen tries to develop a personal connection with his students, in order to increase their trust and acceptance of their need for rehabilitation. He stated, "When I think about the whole person, and I think about the whole kid's experience–what is going on in their life and all that they're dealing with–I figure out what their priorities are." Instead of putting students through the exact same routine, he opens up a discussion to determine what they would like to improve. He stated that through this strategy, he tries to stimulate their motivation consciously or subconsciously.

Trust in the instructor and peers. Huang, Wolcott, and Bargerstock believe that throughout the remedial process, students need to trust both their instructor and peers within the string studio. Huang explained, "If you have enough kids in the same boat, then they all start to enjoy it more. I don't know if 'enjoy' is the right word, but at least they all feel like they are suffering together." Huang tries to establish an expectation in

her studio, where students come in and know that they are going to go through the remedial process. In a similar fashion, Bargerstock believes that when a positive and encouraging environment is established through the attitudes of the upperclassmen, students experience less resistance throughout the rehabilitation process. She added, "Building confidence and trust between the teacher and the student–that's got to happen before we can start the rehabilitation."

Positive results through fragile emotions. According to Dalbec-Szczesniak, the challenges that accompany rehabilitative pedagogy are far outnumbered by the positive benefits and gratitude expressed by her students. She is aware that many of her students will become educators themselves, and that the information that she passes on should be relevant to their everyday lives. For example, she encourages her students to engage in various neck exercises while sitting at the computer that indirectly benefit their violin playing. Dalbec-Szczesniak believes that although students are motivated when pursuing higher education, discouragement often ensues when tasks become difficult. Dalbec-Szczesniak explained that initially, students are:

> Very excited because things happen quickly at first. They will come in after the first two or three lessons and already their posture has improved, their bow hold looks a lot better, and they are starting to sound better. But as soon as it becomes difficult to implement that in the standard repertoire or just adding more layers to it, they can become discouraged. They become a little bit resistant. But that's okay–that's what I'm here for.

Dalbec-Szczesniak believes that first-year students often become discouraged when they attempt to master new tasks too soon. She explained, "You find that barrier of how far

you can push them . . . when they are crying at every lesson, that's not a good sign." Through this awareness, Dalbec-Szczesniak is receptive to the developmental thresholds of her students and celebrates every accomplishment.

Gilman claimed that the challenges that he has faced with students over the years have always led to positive results. He claimed that although his interaction with students was often demanding, his students are appreciative of his effort when they realize that the remedial work is necessary for their future success. He explained the following reality:

> I had to go through some harsh realities at the Eastman School with teachers like Zvi Zeitlin, and sometimes those emerge and you can't help it. But generally speaking, the students that I hear back from are generally appreciative–or you get comments like, "You told me many times about my power production with this bow hold. Now it's really coming home to me how I really needed to change that then because now it is a real struggle. Even though we didn't achieve that, I know that you were correct in doing that." That convinces me not to let up.

Gilman's priority as an instructor is to provide his students with the knowledge to communicate effectively on their instrument and contribute to their own craft. He stated, "It is, after all, the most important reason for playing an instrument, and that's what communicates the most with others. That's why I have them believe right from the very beginning that our purpose is to communicate." Gilman encourages his students to never lose sight of why they chose to pursue violin in their postsecondary studies and to enjoy the learning process.

Although the results are generally positive, both Gillham and Ngai believe that remedial work often causes frustration as students face reality. Gillham believes that first-

year students often resist rehabilitative pedagogy because it challenges their prior perceptions of their abilities and successes as violinists:

> Some are skeptical at first, and they tend to be the ones that are always skeptical. They are hearing the information for the third or fourth or fifth time, and they are still not convinced that they need to go through it in order to do what it is they think they can do. And in that case, I feel like it is my job to make them aware of reality, and their own potential, and their own limitations.

Gillham stated that it is challenging to understand how to approach correction with every student, because some may be emotionally hesitant, while others may have physical blockages. Although these challenges arise, Gillham believes that students pursuing postsecondary studies are receptive to information that challenges their perception of reality and potential as artists. According to Ngai, once students implement the information and feel the tangible improvements, they are appreciative when they are successful in their juries/recitals. Ngai stated:

> I think they appreciate having put in the work or having put in the time to do something and just persevere. It's not easy to just say, "Go back to square one and fix your bow arm," when everybody else is playing Tchaikovsky or Glazunov or what have you . . . and they don't get to play in studio because they are still working on their bow arm.

Ngai claimed that the remedial work is never easy, but if he can convince his students to look past the present difficulties and look at the bigger picture, they persevere through the process. According to the participants, first-year students exhibit varied responses to rehabilitative pedagogy depending on their level of motivation, sense of self-confidence,

and personality. Although frustration may ensue throughout the process, the participants believe that students are appreciative of the remedial work when they trust the intentions of their instructors, feel support from their peers, and hear/feel the tangible improvements in their playing.

Expression of Self-Efficacy Throughout the Remedial Process

Throughout the rehabilitation journey, students express a sense of self-efficacy in personal ways, depending on their perception of themselves and others. The participants have varied responses in terms of how this self-esteem is developed or challenged in their students throughout the remedial process, and how their students often have a distorted sense of reality.

Self-actualization and trust. According to Lewis, Wolcott, and Huang, as students progress through the rehabilitation, their self-efficacy increases because they become more self-actualized and trust the instructor. Lewis explained:

> If they really believe in me and the process, then they are fine. In the beginning as you start to work, if they don't believe that–even if they are more self-actualized–if they don't believe in what they're doing and why they are doing it, then, ultimately, there is a bit of a block.

According to Lewis, students have to understand why they are going through the remedial process and have clear goals. Wolcott stated that when his students trust him throughout the process, "Results breed confidence," and their sense of self-efficacy changes. Similarly, Huang claimed that once students trust their instructor and peers who are going through the same process, they are happier, they sound better, and their self-confidence increases.

Tangible evidence of improvement and positive feedback. Both Dalbec-Szczesniak and Christensen stated that first-year students usually arrive with a distorted sense of self-efficacy that is out of touch with reality. Dalbec-Szczesniak explained, "They have a very different perception of their body and their sound than what is actually happening." To overcome this issue, Dalbec-Szczesniak videotapes her students' lessons so that they see their bow direction, the level of their violins, and hear the sound that is actually being produced. She stated, "The progress is important. They need to know that they are progressing, and that they are on the right track. Otherwise, it can seem pretty useless." Both Dalbec-Szczesniak and Gilman ensure that their first-year students remain motivated by documenting and celebrating every improvement. Christensen echoed this perspective, explaining the positive feedback loop that is established:

> When the sense of self-efficacy comes into alignment with reality and when the lights come on, it's a lot of fun for them, and it's a positive feedback loop. When they decide to listen to you, and they decide to do what you're teaching them, and it starts to work, then they get excited. Then you don't need to tell them everything because then they become self-motivated, and their practicing becomes more efficient because they are listening to the right things and they are thinking about the right things–then your job starts to get a lot easier.

According to Christensen, when students make the decision that the information is important to them, they become self-motivated and committed to the process because they can see, hear, and feel the benefits.

Bargerstock and Ngai also stated that the students' sense of self-efficacy changes when they hear and see improvements through tangible documentation, instead of solely

relying on the feedback of the instructor. Ngai explained, “That’s empirical data. That’s evidence that [they] are doing better. I think that’s really helpful because it’s something that they can’t argue with.” Ngai added, “Their perception of what they are doing is coloured by not only how they feel about themselves and their playing and how people respond to them. It is also how it bears out in something as objective as a recording.” Through tangible recordings, Ngai’s students witness their diligence and perseverance positively affecting their performances.

Clapp also believed that his students expressed an increased sense of self-efficacy when they saw the results of their efforts right away. Clapp had a straightforward approach to remedial work, in that he believed that students simply needed to slow tasks down. When they did so, their confidence increased, because they were successful:

> All you have to do is slow it down . . . do things very slowly with detailed, exact prescriptions of what you are doing. Then [you] see that at half tempo it’s perfect. . . . You can play every note perfectly the first time, maybe 10 percent of the tempo, but every note perfectly.

Clapp focused on a systematic, patient approach to remedial work that provided his students with instant results. Clapp (2012) explains this pedagogical principle in his studio handbook:

> It is important for you to manage your life each day to guarantee hours of clear-minded, concentrated practice. . . . The goal of practicing is to be able to play a passage perfectly the first time tomorrow, no matter how slowly. All practicing builds habits (physical motions you don’t have to think about), good or bad. (p. 5)

Clapp believed that students gain confidence when they become their own teacher, are responsible in the practice room, and make informed decisions through patient, slow practice.

Gillham believes that every success that students experience increases their level of self-efficacy, which positively affects the ways in which they attempt new challenges. He explained the following pedagogical concept:

> When they see, hear, and feel improvement, they open up and become very receptive and it increases their level of confidence. When they are told that there is a problem here, and this is how to solve it, and then they solve it, they feel rather good about themselves and their level of confidence goes up. The next problem, they tackle it with a little bit more confidence and they tend to carry themselves slightly differently in the hallways. They start to offer help to other students. When you eventually have a studio of critical thinkers, they kind of start to feed off themselves. I think students can learn at least as much, if not more, from their peers as they can from their teachers, if they are in the right environment.

Gillham advocates the importance of a supportive studio, because students bond and encourage one another. Gillham claimed that although students see the reality of their own limitations, they persevere towards their goals with focused intent.

The participants stated that they often notice positive psychological changes in their first-year students when they make the decision to embrace the rehabilitative tasks. According to the participants, self-efficacy is affected by the positive feedback loop of

effective practice, motivation, support from their instructors and peers, tangible documentation of improvement, and trust, which begins the cycle again.

Successful Outcomes Through Remedial Pedagogy

The participants believe that first-year students experience a variety of successful outcomes as they proceed through rehabilitation. The students acquire a greater sense of trust, determination, and support throughout the process, increase their level of artistry and self-actualization, and improve their technical/musical skills.

Trust, determination, and support. Dalbec-Szczesniak, Clapp, and Huang believe that trust, determination, and peer/parental support are the most significant outcomes through remedial work. Huang believes that students need to have the "mental attitude and the determination of wanting to get better. . . . And with this determination, [they] are most likely to find time to go through the process." In addition to a positive mental attitude, parental and peer support are equally important. Huang added, "If [students] have peer support or parental support even when [they] are in college–parents [who] continue to encourage [them] to do [their] absolute best–I think those are the most important things." Similarly, Dalbec-Szczesniak stated that string studios are important for students to vent their emotions, cope, and share their progress.

Self-awareness and artistic freedom. Lewis, Ngai, Wolcott, Christensen, Bargerstock, and Gilman believe that self-actualization and musical freedom are the most noteworthy outcomes. Christensen and Bargerstock stated that regardless of their students' future plans in music, they strive to not let the technical challenges overshadow the music. Wolcott echoed this belief, stating, "The most important thing is not sounding like Heifetz. I think the most important thing is being free to express oneself . . . and

having the freedom to do it and the confidence to do it." According to Wolcott, as students acquire technical freedom, they gain the musical freedom to express themselves without hindrances. Similarly, Gilman stated that the most successful outcome for students involved in the rehabilitative process is an understanding that they are becoming their own artist:

> I think it is important that they recognize the advancement of their own maturity on various levels . . . realize a technical awareness that they are able to supply as necessary, and that they did these things for musical growth–not to become the great technician or not to be able to sight-read anything in the world, but they did it for musical growth. Also, that they did it for self-fulfillment and sense of worth for themselves as an artist. On an advanced level of study in junior or senior year, or even as a graduate student, once you start inserting that word "artist" in there, then you set another goal for them. "Oh! You see me as advancing towards an artist!" Well yes, because that has many meanings. And then even more importantly, I think the results of this pedagogical approach to rehabilitation, the ability to pass on ideal techniques to their students and also their colleagues in the future, no matter what level of engagement as a player they achieved.

Gilman claimed that, in addition to musical growth towards artistry, students acquire knowledge that they are able to pass on to their own students and peers. Gilman believes that it is his responsibility to nurture and encourage every student to reach their full potential as artists.

As students proceed through their remedial work, Gillham encourages them to be self-aware of their progress and approach tasks in a nonjudgmental manner. Through this

perspective, Gillham stated, “You are somehow able to tackle the problem a little bit more pragmatically, having the will and the determination to go through with something.” Gillham believes that violinists will never reach a day where they do not have to reevaluate or practice the basic techniques. He compared violinists to athletes training for the Olympics or baseball players in the World Series:

> Baseball players are always going back to the basics. Every day they go out on the field and they have practice before a game. They are just going through the basic motions–the basic plays–over and over and over again so that in the game, it is instinctual. They don’t even have to think about it. And when we play the violin, I think that we always need to come back to the basics so that we are playing the best that we can. We need the basics in order to be able to communicate–having the tools isn’t enough. The tools are there in order that we can express ourselves.

Rolland (1974b) believes that “motion skills, whether in string playing or sports, are highly refined actions requiring coordination, timing, and patient practice. Just think how tenacious the champion golf player is in refining the form and accuracy of his drive!” (p. 5). Similarly, Lewis (2014) claimed in a recent master class on YouTube that all “musicians are athletes,” and instils this principle in his students on a daily basis.

The participants believe that successful outcomes are inevitable when first-year students fully engage in remedial work. Many of the participants believe that as their students embrace the rehabilitation, they gain a greater sense of self-efficacy, they become more self-actualized, and motivated to undertake new goals. They also stated that their students acquire trust, determination, relationships with their instructors and peers,

and greater artistic achievements. The participants understand that the future goals of their students will be different, and that it is their responsibility to encourage and nurture every individual as an artist.

Personal Rewards for Violin Instructors in Terms of Rehabilitation

In addition to the successful outcomes that students experience throughout the rehabilitative process, the participants also experience valuable rewards. Although remedial work can be difficult at times, the participants believe that the rewards far outnumber the challenges.

Individual goals, artists, and accomplishments. Bargerstock, Wolcott, Clapp, Gilman, Christensen, and Lewis believe that the greatest rewards as a violin instructor are the personal breakthroughs that they witness with their students. Clapp's greatest rewards included seeing the results "happen in the lesson that they couldn't do when they walked in, and seeing it happen week after week–that they've actually incorporated it . . . and that it's become part of their performance." Gilman paralleled this belief, stating that when students acquire "modern approaches to self-analysis, practicing skills . . . a higher sense of musical maturity, interpretation, and the ability to help others gain those skills–that's my reward."

Christensen stated that the best part of his profession is when the "light comes on . . . as a result of their hard work, and a couple of nudges in the right direction, something which didn't work starts to work and then they get excited about playing." He claimed that when he receives text messages from students stating their love for the instrument or successes in the practice room, these moments make the isolation of his job worthwhile. He added, "When you realize that something that you have done has helped ignite that

kind of passion in somebody who you also believe in . . . when you make that connection with a kid, it's awesome." Lewis believes that there are many different avenues in the music profession and his greatest rewards are leading students to their own self-discovery:

> My real love and enjoyment is that moment of self-discovery when they take ownership of something we've been working on . . . that moment when they are able to make the breakthrough from something that has stopped them from being successful–that's the reward for teaching.

Similarly, Dalbec-Szczesniak believes that the progress and the audible differences in her students' playing are her greatest rewards as a violin instructor. She stated, "A first-year coming in and then leaving after four years, it's night and day." She is equally supportive of students who may not attain this level of success:

> The ones who don't work at it and don't get it before they leave, I am always hopeful that someday it will come back to them what we talked about–what we did, the work that we did–and that they will be ready to implement it at some point. But I don't give up on them entirely just because they didn't get it while they were with me. Sometimes it takes another step, and another teacher, and another experience to make it gel in some way.

As an instructor, Dalbec-Szczesniak strives to nurture the individuality of every student, impart as much valuable knowledge with the intent of it being passed on, and encourage the love of violin playing.

In a similar fashion, Gillham's greatest reward is his ability to share his pedagogical knowledge with his students, with the intent that they will educate the future

generations of violinists. He strives to instil a love for music in all of his students, regardless of their future plans:

> If you don't have the love for music, then I'm not sure if you are going to have the determination or the willpower to do the work that needs to be done to become a better musician. . . . I try to instil a love of music, regardless of whether they are going to become professional musicians or not. And I also gently try to educate them about their profession, and the traditions, and who people were. It is amazing these days, that many students don't know who Milstein, Heifetz, or even Perlman were, or are. So I've got lots of photos in my studio and we talk about–and I hand out recordings–just trying to develop them as good citizens of the violin world somehow.

Gillham understands the responsibility that he has as an instructor to affect the next generation of teachers and artists.

Through the participants' diverse educational and teaching experiences presented in the data analysis, in addition to the multiple data sources, a holistic view of rehabilitation related to first-year postsecondary violin performance students is evident. According to Gunn, Richburg, and Smilkstein (2007), "Learners construct their knowledge from and during their experiences in life" (p. 84). The participants shared how their early educational experiences, in addition to their physical/psychological remedial experiences inform their current pedagogical perspectives towards remedial work. In the following chapter, I present a discussion of the data analysis with practical implications for the field of violin pedagogy.

CHAPTER V

DISCUSSION AND IMPLICATIONS

The discussion section is formatted in such a way that the participants' educational experiences establish the context for their individual pedagogical perspectives through: appropriate early instruction, talent versus environment, love for the instrument, comfortable setup, and Suzuki influences. These experiences create a foundation on which the participants' current pedagogical perspectives towards rehabilitation are reinforced and expanded. I then examine each research question: the aspects of playing in first-year performance students that require remedial work, why remedial work is often required, the remedial strategies that postsecondary violin instructors implement, and how they assess the need for correction. The participants raised poignant issues pertaining to the psychology related to the student, metacognition, and postsecondary pressures, which add a new dimension to the discussion of technical/musical rehabilitation. The pedagogical expertise and applied experiences presented in the discussion should inform current and future violin pedagogues about the effects of inappropriate early instruction, how to assess the need for rehabilitation, and how to address correction effectively. In each section, I include an explanation of how the field of violin pedagogy, through an understanding of rehabilitation, could be affected through the acquisition of this knowledge.

Pedagogical Issues Raised Through the Educational Experiences of the Participants

Appropriate Early Instruction

Among the 10 participants, three began their violin studies within the public school system, three began with instructors who were not classically trained as violinists,

and four were involved in Suzuki training. It is intriguing to note the similarities between many of their experiences: two out of the three participants who began their studies in the public school system claimed to have had predominantly poor training, the participants who experienced nontraditional teaching stated that they were self-taught, and three out of the four participants who were trained through the Suzuki method claimed to lack in appropriate note-reading skills and setup. All of the participants stated that they endured varied degrees of physical and psychological rehabilitation in their later studies. Although Gilman experienced foundational learning within the public school system, he had to undergo some aspects of remedial work throughout his studies in order to meet his instructors' rigorous technical standards. In a similar fashion, Lewis claimed to have had exceptional early Suzuki instruction and endured the least amount of remedial work in his postsecondary education.

The participants with the most teaching experience (Clapp, Gilman, and Bargerstock) began their violin studies within the public school system. Clapp and Bargerstock claimed to have had aspects of poor instruction and, as a result, developed some bad habits. Although their experiences occurred 50-60 years ago, there are implications for the present day with regards to the effects of insufficient music instruction in the public school system (Marland, 2003). Bargerstock and Christensen stated that they often accept students into their postsecondary programs who have come directly from inadequate school music programs. In addition, they both discussed the isolation of their institutions and the lack of feeder schools in their areas with potential students. Christensen explained:

I have kids who come into my program who have had only a couple of private

> lessons. They have come through their public school orchestra, and all of the problems that are associated with that, and the deficiencies that are associated with that . . . and my job is to turn them into competent music educators in four years. Those kids absolutely need a huge amount of work.

Christensen claimed that first-year students who come through the public school system often lack the knowledge of basic violin technique and require extensive rehabilitation. Research findings have determined that the development of technical/musical skills and understanding is rarely cited as a function of music within the classroom (Bresler, 1994; Giles & Frego, 2004; Whitaker, 1996). In the province of Ontario, the *Ontario Ministry of Education* (2012) has recently garnered a lot of attention in terms of the hiring practices of teachers through Regulation 274. Regulation 274 places precedence on teachers with seniority above those who may have specific superior teaching qualifications (e.g., specialization in music) (Ontario Ministry of Education, 2012). As a result, teachers who lack qualifications could become insecure in their own abilities and affect the quality of preparation and instruction in the critical early stages of study (Bresler, 1994; Davidson, Howe, & Sloboda, 1997; Davidson, Howe, Moore, & Sloboda, 1998; Hamann, 2000; Howe & Sloboda, 1991b; Madsen & Cassidy, 2005; Mills & Smith, 2003; Olsson, 1997). Although there are factors surrounding individual versus class instruction, class size, and the amount of teaching time, questions arise regarding the differences in rigour between public school and private instruction and how students become motivated to pursue music outside of the classroom (Hamann & Frost, 2000).

For many students, music education within the school system is their only exposure to the arts, which highlights the need for appropriate instruction and guidance

(C. Smith, 2000). As evidenced in the experiences of the participants, school music lessons led to future paths of influence, legacy, and contribution to the field of violin pedagogy. Although instructors cannot predict the future paths of their students, they should strive for excellence in their everyday practice in order to nurture individual potential. The participants' experiences also addressed issues surrounding their talent and environmental influences.

Talent Versus Environment

Both Clapp and Bargerstock, who were educated first in the school system, were accepted into the prestigious Juilliard School within only a few years of study. This raises questions surrounding the innate qualities of talent: Would Bargerstock and Clapp have excelled with any instructor, or only with those who provided appropriate instruction? Howe, Davidson, and Sloboda (1998) define the properties of innate talent:

> It originates in genetically transmitted structures and hence is at least partly innate. Its full effects may not be evident at an early stage, but there will be some advance indications, allowing trained people to identify the presence of talent before exceptional levels of mature performance have been demonstrated. These early indications of talent provide a basis for predicting who is likely to excel. Only a minority are talented, for if all children were, there would be no way to predict or explain differential success. (pp. 399-400)

Although Howe, Davidson, and Sloboda (1998) support the notion of innate talent within specific domains, there are varied beliefs throughout the literature. Feldman (1988) claims that talents are not acquired by an individual, but are innately a part of their being. By contrast, Cattell (1973) supports personality development and states that genetics and

the environment equally affect children. Many believe that there is little evidence explaining the effects of innate musical talent at a young age, while others refuse to take a position (Cattell, 1973; Csikszentmihalyi, 1998; Subotnik, Olszewski-Kubilius, & Worrell, 2011). According to Kemp and Mills (2002) and Suzuki (1983), environmental factors far outweigh innate talent.

Both Clapp and Bargerstock attributed their success to their supportive parents and family musical involvement. In a similar fashion, Huang and Lewis attributed their work ethic and musical success to the diligence of their mothers, who were devoted to their practicing. Researchers have noted that parental expertise in music is not a precursor of a child's future musical success (Sloboda & Howe, 1991). An environment in which music is an integral part of home life is more influential than any musical engagement one may receive in school (Hargreaves & North, 1999; North, Hargreaves, & O'Neill, 2000; Pitts, 2009; Sloboda & Howe, 1991). Dai and Schader (2001) determined through research that an appropriate learning environment at home reduces anxiety, encourages emotional growth, and increases the potential for long-term task commitment. Wolcott stated in his interview that students who experience unstructured parenting and little parental support at home when practicing often require extensive rehabilitation in their postsecondary studies.

Through empirical studies examining music participation in school, researchers determined that early adolescence is a critical time when weakness, negativity, and motivation change beliefs surrounding competence abilities and musical engagement (Austin & Vispoel, 1998; Sloboda & Davidson, 1996). In order to combat these issues, "The child's motivation needs to be internalised before the teenage years if they are to

become committed to music" (Hallam, 2002, p. 247). This internalized motivation helps them to be independent in their practicing, develop a relationship with their instructor, and understand their role in the learning process (Hargreaves et al., 2003). Parents and violin instructors within both private and public school settings should be aware of this concern as children progress into adolescence. As students are supported to persevere through this period of emotional instability and reinforce the skills required for higher education, they reduce the risk for potential future rehabilitation.

Through the personal experiences of the participants, issues arise surrounding appropriate guidance in private and public school instruction, innate talent versus environment, the importance of parental support in the learning process, and the developmental changes in adolescence. Although the participants began their studies many years ago, the experiences shed light on the importance of appropriate instruction and environment in the present day. Violin instructors and parents have vital roles in affecting the artistic potential in children, and have the responsibility "to make music central or peripheral [in their] lives" (Pitts, 2009, p. 255). The experiences students endure in their early instruction could affect their psychological health and potential for rehabilitation in their future postsecondary studies.

Love for the Instrument

Researchers have determined that students who participate in musical activities in both the public school system and private instruction have increased social skills, love for music, sense of achievement, motivation, and self-efficacy (Hallam, 2010; Hallam & Prince, 2000; Kokotsaki & Hallam, 2007). In the early stages of learning, violin instructors should strive to create a warm and enjoyable learning environment (Hallam,

1998; Sosniak, 1990), which "gets the learner involved, captivated, 'hooked'–motivated to pursue the matter further" (Sosniak, 1990, p. 155). Once the child is "hooked," it increases their likelihood to systematically proceed through the stages of development and focus on specific expectations of skills (Kemp & Mills, 2002; Kennell, 1997). Dalbec-Szczesniak, Gillham, Christensen, and Lewis had vivid recollections of the positive environment and love for the instrument that their instructors instilled in them in their early lessons. This raises a poignant issue of how instructors balance the insistence of correct setup with an enjoyable environment where music is the priority. As Lewis stated in his interview, students may not necessarily remember the technical issues that their instructors fixed, but they always remember the personal relationships they formed. For postsecondary students requiring rehabilitation, their love for the instrument affects their motivation to persevere through the learning process, regardless of their deficiencies (Bergee & Grashel, 2002; Jones & Parkes, 2010). Violin instructors should nurture a love for the instrument with students at any age and level of proficiency.

Comfortable Setup

In addition to nurturing a love for the instrument, many of the participants addressed the issue of finding comfort. Rolland (1974b) believes that, in the early stages of instruction, the establishment of a natural violin hold should be constantly reevaluated, with comfort as the ultimate goal. Huang, Dalbec-Szczesniak, and Wolcott stated that in their early instruction, they were primarily self-taught and found their most comfortable positions with the violin independently. They had to navigate through their technical/musical issues with experimentations and the advice of their peers. As a result of these experiences, they now encourage their first-year performance students to find

their own level of comfort with the violin. Huang stated that although violinists are never completely comfortable with the instrument, the goal is to find the level of personal comfort that will allow musical freedom. This raises some intriguing questions: How does the instructor determine the line between finding personal comfort and having an inappropriate position? How much freedom does the instructor give students in terms of finding their own natural positions before making an adjustment? Does comfort override technical expectations, regardless of the potential for artistic hindrances in the future?

In the early stages of study, a child may acquire a "comfortable" setup that leads to the acquisition of bad habits. Wolcott and Christensen endured similar experiences in their early education where they set themselves up, felt comfortable, and were able to express themselves freely to a certain level. As they matured, they came to the realization that there were gaps in their technique, as these deficiencies kept them from progressing further. Through the participants' experiences, it is evident that young children get used to their deficiencies, and incorrect positions feel "better" as a result of habitual reinforcement (Salzberg & Salzberg, 1981). It is the instructor's responsibility to diligently reinforce the correct positions in the first lessons because the muscle memory is established (McPherson & Renwick, 2001; Pitts, Davidson, & McPherson, 2000; Watson, 2006). Rolland (1974b) states that instructors must have the following:

> The patience and perseverance required in teaching the correct hold are well worth the effort in the long run, as the instrument placement affects not only shifting and vibrato but also bowing. Without the correct hold, it is difficult or impossible to develop good bowing habits. It should be understood that the

> development of a good instrument hold is a continuous process, and that the actions which follow should be frequently reviewed. (p. 61)

According to Rolland (1974b), decisions within the music studio should be continually reevaluated and propelled by long-terms goals. Similarly, De Alcantara (1997) states that "human growth is never-ending, and each individual develops in a unique way. If you could find a 'right position,' it would be right for you, and for a short period of time," (p. 14) because the body is always changing. According to the principles of the Alexander Technique, "There is no such thing as a right position, but there is such a thing as a right direction" (De Alcantara, 1997, p. 14). This highlights the issue of balance that many of the participants discussed in their interviews, in terms of knowing how far to developmentally push students before letting things go. If instructors are militant about every position being completely "perfect" in the initial lessons, young children may lose the desire to continue playing. Teacher Attribution Scaffolding Theory (Kennell, 2002) exemplifies the sensitivity required to make corrections, judgments, and assessments based on the psychological state of the student at every stage of their development (Creech & Hallam, 2010). There is a constant give and take between instilling empirical elements of technique/musicality and nurturing a love for the instrument.

Suzuki Influences and Hindrances

Christensen, Ngai, and Gillham endured elements of inappropriate Suzuki instruction and acquired psychological and/or physical deficiencies throughout their studies. By contrast, Lewis acquired wisdom, knowledge, and a love for the instrument. This dichotomy between the participants addresses correct early development, Social Development Theory (Vygotsky, 1978), and Scaffolding Theory (Wood et al., 1976) in

violin instruction. Throughout Lewis' early studies, he was nurtured in an environment where there was extensive demonstration, imitation, and an internalization of skills through repetition. The development occurred within the zone of proximal development, where scaffolding allowed for the accumulation and internalization of skills in a sequential fashion (Fernyhough, 2008; Vygotsky, 1978, 1987; Wiggins, 2007). Throughout Lewis' studies with Suzuki and DeLay, he continually layered new skills on top of his technical foundation through many focused repetitions. Therefore, the new knowledge was built on a foundation of previous knowledge, observation, and experience, and the internal transformations led to more advanced thinking (Gredler, 2009, 2012; Powell & Kalina, 2009; Vygotsky, 1994, 1997). Lewis mastered skills by ingraining them into his muscles and brain through seemingly impossible practice assignments. This highlights the importance of appropriate reinforcement in the early stages of learning, positive reciprocal learning, and the internalization of skills, which lead to technical/musical freedom.

By contrast, Gillham, Christensen, and Ngai endured elements of poor Suzuki instruction in their early years of study. As a result of inappropriate guidance and the acquisition of deficiencies, they all experienced varied degrees of physical and psychological damage. As Lewis stated, when instructors have a blasé attitude towards correct early development, they "set their students up" for potential technical/musical hindrances and emotional issues. Although the deficiencies are dependent on every student's ability to process information and internalize tasks, Christensen stated that there are "instant roadblocks placed before them" if the instruction is faulty from the beginning. Instructors following the Suzuki methodology should have a deep

understanding of the philosophy behind the pedagogy, continually attend conferences and workshops for professional development, and seek pedagogical advice from colleagues in their immediate surroundings. Gillham, Christensen, and Ngai are successful violinists today because they persevered through extensive remedial work. It would be intriguing to note how different their paths may have been if their early Suzuki instructors thoroughly understood violin technique and when to introduce music literacy.

Through the educational experiences of the participants, the importance of appropriate early instruction within a supportive environment is evident. These specific examples reveal meaningful implications for current and future violin pedagogues because inadequate teaching in the critical early stages of learning increases the potential for rehabilitation in future studies.

Technical Aspects of Playing Requiring Rehabilitation

The participants agreed that most first-year students have pressing deficiencies with posture and the bow arm. It is interesting to distinguish the similarities between the instructors, although they are employed across North America at various postsecondary institutions. Does this suggest that the majority of preuniversity violin instructors lack the knowledge of appropriate posture and the effective use of the bow? Although this may be the case, some preuniversity instructors may be limited in their access to information, view pedagogy through subjective perspectives, or lack in communication skills.

Body Awareness

Ngai, Lewis, Dalbec-Szczesniak, Gillham, and Christensen claimed to have been influenced by their instructors in terms of body awareness or the Alexander Technique (Alexander, 1910, 1923, 1932, 1941). Body awareness stems from a social aspect of

learning, as students observe their instructor's bodies, mimic their intentions, and internalize the sensations in their own subjective ways (Kempter, 2003; Kennell, 1997; Rolland, 1974b). Ngai, for example, stated that he uses imagery in his teaching in order to encourage his students to use their complete body. De Alcantara (1997) explains this concept through the Alexander Technique, stating that "the part reflects the whole . . . every part of the self always plays a role, regardless of the situation . . . every part is always connected to every other part" (p. 12). This notion of the complete body helps Ngai in his approach to rehabilitation because students have to be aware of their entire body, establish the "root" first, and then build skills systematically through scaffolding.

Dalbec-Szczesniak and Gillham also advocate the Alexander Technique with their first-year students, and use a hands-on approach. Through a hands-on type of approach, they are able to monitor what the student is doing physically, prevent false interpretations of motions, and encourage correct "positions of mechanical advantage" (De Alcantara, 1997, p. 88). Rolland (1974b) describes the benefits of teacher modeling:

> The physical help of the teacher, much needed and helpful in developmental teaching, is particularly important in remedial work. The student, if handicapped by ingrained faulty habits, is often unable to make correct movements in spite of his best intentions or the most exacting and clear explanations of his teacher. The sensitive and helping hands of the teacher can often make the student realize and sense what is wanted, more so than rational explanations. (p. 181)

Throughout the remedial process, instructors can effectively use modeling to reinforce correct motions and encourage the internalization of various skills. In addition to modeling, Dalbec-Szczesniak creates exercises for her students to accomplish in their

everyday life that connect to violin playing. De Alcantara (1997) explains this principle, stating that "the Alexander Technique develops your innate ability of attending to several things at once in a specific way, namely, in thinking of your use at the same time that you carry out any tasks of daily life" (p. 56). Through this principle, students have an awareness of their bodies at all times and in all activities. This is imperative in rehabilitative pedagogy because, as Dalbec-Szczesniak stated, students must have body awareness in order to know where the deficiencies are being generated.

Through rehabilitation, students reinvent their approach to the instrument and become mindful of how they accomplish daily technical/musical tasks. Although some changes are instantly effective, Gilman reminds his students that they will frequently revert back to their prior deficiencies and habits. Students engaging in remedial work must have patience because practicing affects the learning processes in the brain at different rates:

> Practice can set in motion neural processes that continue to evolve many hours after practice has ended. Thus, even a limited training experience can induce behaviorally significant changes in brain activity, and initiate important long-term effects that may provide the basis for the consolidation of the experience. . . . Motor skill learning requires time and has two distinct phases . . . an initial, fast improvement phase ("fast learning") is followed by a slowly evolving, post-training incremental performance gains ("slow learning"). (Karni, Meyer, Rey-Hipolito, Jezzard, Adams, Turner, & Ungerleider, 1998, p. 867)

Throughout the remedial process, students experience both instant physiological changes and resistance (Rolland, 1974b). According to B. Conable and B. Conable (2000), "Body

Mapping" is a strategy that can help students work against the habitual reinforcement of deficiencies. Body Mapping encourages musicians to consciously realign their self-awareness of how their bodies actually move, as opposed to their perceptions of how their bodies are moving. Through the lens of Attribution Theory, the challenges that arise through this heightened self-awareness can have an emotional effect on students as they navigate through new sensations, decide whether to continue reinforcing uncomfortable motions, and gauge their progress (McPherson and McCormick, 2006). Students may experience negative emotions of defeat and discouragement if they perceive their progress to be slow (B. Smith, 2005; Weiner, 2006). Although these challenges arise, the Alexander Technique and Body Mapping offer effective solutions through the continual assessment of the body, focused attention, and effective reinforcement of skills in the practice room (Valentine, Fitzgerald, Gorton, Hudson, & Symonds, 1995).

Many of the participants believe that correct posture has to be established before they are able to address the left hand or bow arm because it affects every part of violin playing. Christensen stated, "If the posture is messed up, you can't fix in isolation." Posture determines the extent of musical freedom and potential success that a student may have (Rolland, 1974b). Ngai, Huang, Bargerstock, and Gillham encourage their students to reevaluate their chinrests and shoulder rests, because a simple change in equipment often solves postural issues without any physiological modifications. The chinrest fitting system (kit) available through Frisch and Denig at *chinrests.com* have become increasingly popular in recent years. According to Frisch and Denig (2007), "Just as each body type needs clothing that fits, violinists also need a chinrest that conforms to the neck length and to the shape of the jaw" (p. 51). Students who have ill-fitting

equipment may turn their head to gain comfort with the instrument, lower their instrument towards the floor, have improper head alignment over the tailpiece, and experience neck aches or headaches (Frisch & Denig, 2007). In addition to the importance of proper equipment, Lewis addressed the recent surge in the popularity of yoga, Pilates, and the development of core strength. This increased awareness of the complete body, relaxation, and core strength could affect the field of violin pedagogy, as musicians begin to view themselves as athletes and transfer this knowledge to their playing (Lewis, 2014).

Violin instructors at the postsecondary level often have to rehabilitate habits that have accumulated throughout their students' adolescence. Ngai stated that teenagers often fail to adjust their violin playing to their physiological growth. In a similar fashion, Zweig (2008) believes that all teenagers go through a period of discomfort and awkwardness when they reach a certain age and, for example, their arms are suddenly longer. Although a student's growth and laziness could reinforce improper posture, the instructor must guide the student through appropriate physiological awareness and adjustments (Kennell, 2002). If a student is encouraged to have correct posture in their early lessons, they may acquire an automatic awareness in terms of how they stand and hold the instrument (De Alcantara, 1997; Rolland, 1974b; Zweig, 2008). This internalization of body awareness could greatly impact their violin studies in both preuniversity and postsecondary education.

Students and instructors at the postsecondary and preuniversity level should attend Alexander Technique and Body Mapping classes/workshops, in addition to sessions with physical therapists. This knowledge has the potential to affect the

development of young students and decrease the risk for postural rehabilitation in higher education. In addition to applied resources addressing posture, there are helpful books available in print form. With regards to learning the principles of the Alexander Technique: *Indirect Procedures*, by Pedro De Alcantara (1997), *How to Learn the Alexander Technique: A Manual for Students,* by B. Conable and W. Conable (1995), *The Structures and Movement of Breathing*, by Conable and Jordan (2001), and *Stretching for Strings*, by Winberg and Salus (1990) are valuable resources for developing body awareness and relaxation in students at any age and level of proficiency.

Although the participants have distinct pedagogical perspectives, many agreed that their first-year students have deficiencies with body awareness and posture, which affect every facet of violin playing. An understanding of the complete body through the Alexander Technique, appropriate equipment, and an athletic perspective on physical health and wellbeing have affected the participants' views of body awareness and rehabilitative pedagogy with first-year performance students.

Bow Technique

In addition to posture, many of the participants stated that their first-year students have deficiencies in terms of bow holds, knowledge of articulations, knowledge of basic bow strokes, stiffness, immobile fingers and wrists, tension in the arm, and poor tone production. Although these issues are common amongst many students (Galamian, 1999), the participants have varied approaches in addressing the deficiencies, based on their prior education and teaching experiences. As the participants assess their students' bow technique through the Teacher Attribution Scaffolding Theory (Kennell, 2002), they determine how to affect change through their assessments, decisions, and effective

communication of their intentions (Duke, Prickett, & Jellison, 1998; Gholson, 1998; Hays, 2013; Kennell, 2002; L'Hommidieu, 1992; Powell & Kalina, 2009). Some of the specific steps that the participants follow when rehabilitating bow holds include: holding a pencil, shoulder bowing, holding the bow with only the index finger and thumb, adding fingers to the bow in a systematic manner to feel the transfer of balance, and mobilizing the fingers through various strokes (e.g., collé and martelé). These scaffolding strategies create a foundation of basic motions, before students layer new skills of advanced bowing technique. This requires patience and perseverance in both the instructor and student at every step of the process to ensure that the motions are executed and reinforced efficiently.

Despite the "rules" of bowing technique and the specific steps required to rehabilitate bow holds, the participants agreed that tone production dictates the level of artistic success in violin playing. According to Ngai, tone signifies technique: "If it's a nice free healthy tone, you know that things are sort of in the right place. If there is a tightness or forced quality, then you know there is some tension." In a similar fashion, Johannsen (1936) explains the importance of tone production in bowing technique:

> No matter how full of beauty the composition studied may be, the loveliness will remain obscure and hidden from the student unless he has acquired some understanding of the rules regarding bow technique, and unless he is able to put these rules into practice. (p. 29)

An understanding and internalization of basic bowing technique affects the sound, which is the vehicle for musical expression (Johannsen, 1936). Ngai, Lewis, Huang, and

Dalbec-Szczesniak stated that tone production must be a priority for all violin instructors and believe that like posture, bowing deficiencies equally affect the left arm.

At present, there are many pedagogical resources available for preuniversity instructors that address bowing technique. In addition to the standard pedagogy book of Galamian's (1999) *Principles of Violin Playing and Teaching*, there are other helpful resources in print and online. Fischer's (1997, 2004) *Basics* and *Practicing* include detailed exercises to develop all facets of technique, including basic bow strokes. There are online resources, such as *stringpedagogy.com, violinmasterclass.com*, and *violinist.com*. When violin instructors at the preuniversity level are educated and willing to continually reevaluate their pedagogical approaches to the instrument, the students ultimately benefit. As the participants stated, posture affects all facets of violin playing and the bow is the vehicle for musical expression. Knowledge about posture, body awareness, and basic bow technique could potentially decrease the volume of rehabilitation required in postsecondary studies and allow instructors to enhance prior techniques through scaffolding.

Socioeconomic Issues

The participants had similar perspectives regarding the percentages of first-year students requiring rehabilitation within their institutions. Lewis, Ngai, and Gillham claimed to work on rehabilitative issues with all of their students. They view remedial work as an integral part of postsecondary education, regardless of the students' technical/musical proficiencies. It is interesting to note that they all teach at reputable institutions, including the University of Texas, University of Hartford, and University of British Columbia. Clapp, who taught at the world-renowned Juilliard School, claimed

that only 50% of his students required some form of rehabilitation. All of the remaining participants ranged between 90%-100%. Bargerstock, Christensen, and Wolcott stated that all of their students require extensive rehabilitative work. This addresses a poignant concept in terms of how rural isolation and socioeconomic status affect music education, in addition to the differentiation in admission requirement standards amongst institutions. The Juilliard School has a reputation for high technical/musical standards, and as a result, this institution attracts a high quality of performance students.

Both Bargerstock, who teaches at Appalachian State University in Boone, North Carolina, and Christensen, who teaches at Southeast Missouri State University, in Cape Girardeau, Missouri, commented on the artistic level of their students and the isolation of their institutions. Appropriate string instruction in North America is often found in more suburban areas as opposed to urban or rural centres (Brenner, 2010b; Doerksen & Delzell, 2000; Gillespie & Hamann, 1998; Gillespie, Russell, & Hamann, 2014). Socioeconomic status is an important determinant of the types of music in which students are interested, the level of active engagement in music education, and the perceived level of parental support at home (Brandstrom, 2000; Corenblum & Marshall, 1998; North & Hargreaves, 2007; C. Smith, 2000). According to C. Smith (1997), "Research shows that socioeconomic level is a strong predictor of the existence of a string program at the elementary level–the higher the socioeconomic level, the more likely there will be a strong string program in existence" (p. 37). This is partially due to the financial expectations required to provide quality instruments, lessons, appropriate facilities, and support for concert attendance (Gaunt & Hallam, 2009). Bargerstock and Christensen claimed that the teaching level is poor in their rural areas, the students are raised in a

lower economic bracket, and there are limited feeder schools for students to seamlessly transition into their postsecondary studios. Christensen explained:

> If I was in a place where I was getting students from Mimi's program or I was getting students directly from Mary Cay [Neal's] program or something like that, I wouldn't need to do a thing with them. We could just talk about music all day, and that would be awesome.

This issue raised some questions: If this is the reality for both Bargerstock and Christensen, how do they increase the standard of preuniversity teacher training in their areas? Is it simply a matter of educating their students with appropriate information to then affect the next generation of violinists? In low socioeconomic areas, if young students are not exposed to appropriate instruction in the schools, what will inspire them to pursue music outside of the school system?

Since its inception in 1998, *The National String Project Consortium (www.stringprojects.org)* has established string projects at 43 universities and colleges across the United States and has educated over 8,000 public school children. The programs directly address the shortage of string teachers by training undergraduate music students with hands-on teaching experience, and provide young children with quality music education (Przygocki, 2009). According to Przygocki (2009), the projects serve as:

> Teacher-training program[s] that provide lessons, classes, and ensembles for children taught by college students under the close supervision of a director and a master teacher.

> . . . The format emulates a public school string program, giving teachers experiences that will have direct, practical application when they enter the teaching profession. (pp. 32-33)

In a similar fashion, this pressing issue of inadequate preuniversity instruction inspired one of my mentors, Dr. Brenda Brenner (2010b), to establish a string project at a lower income elementary school in Bloomington, Indiana. According to Brenner (2010b), not only do the students benefit from the responsibility, high quality instruction, and attention, but also the program educates the next generation of instructors through hands-on teacher training. These programs established throughout the United States model the importance of training the next generation of pedagogues through practical experience, exposing young children to quality string instruction, and emphasizing a love for music. Canadian universities, conservatories, and public schools would benefit greatly from this type of project model, and funding should be available to further the future of music education throughout the nation.

Appropriate violin instruction is imperative, regardless of rural, suburban, or urban locations and socioeconomic circumstances (Brenner, 2010b; E. Jorgensen, 2003; C. Smith, 2000). The early stages of instruction are critical for establishing a strong technical/musical foundation and instilling the motivation that is required to persevere through the learning process (Hallam, 1998; Rolland, 1974b; Zweig, 2008). Through the lens of Teacher Attribution Scaffolding Theory, violin instructors have the choice whether or not to address correction, to be persistent with their weekly expectations, and to view their profession as a responsibility (Creech & Hallam, 2010; Gholson, 1998; Hays, 2013). It is alarming to hear the commonalities between the participants who teach

in rural areas regarding the poor preuniversity instruction when there are many pedagogical resources available. This is the reason why Zweig (2008) created her *stringpedagogy.com* curriculum. She noted the effects of inadequate preuniversity instruction and instead of keeping her pedagogical expertise to herself, she sought to share her knowledge with other teachers. She also directs a 10-day retreat for professional violinists and violists every July at Indiana University Jacobs School of Music. Throughout the sessions, instructors discuss proper setup in the beginning lessons, appropriate etude/repertoire sequences, the bow hold and basic bow strokes, and rehabilitation. Through educational resources, instructors have the opportunity to further their knowledge and pedagogical skills, and affect the future generations of violinists.

Reasons Why First-Year Performance Students Require Remedial Work

The participants had distinct beliefs as to why their first-year students require rehabilitation. These perspectives are affected by their own personal experiences in their early studies and their teaching careers, as beliefs are shaped through experience (Lincoln, Lynham, & Guba, 2011). Some claimed that the deficiencies are established at the outset of instruction through poor teaching or an incomplete dissemination of information. Others stated that habits accumulate throughout young students' studies because instructors fail to correct them or the students become lazy.

While some participants stated that there is simply "bad teaching" and failed attempts to relay correct information, others claimed that the blame is shared between the instructor and the student. According to some of the participants, the instructor could present the correct information and still have to address the same concerns week after week. The student ultimately decides whether or not to implement the information while

practicing (Kemp, 1996; McPherson, 2000). At the postsecondary level, Dalbec-Szczesniak, Lewis, and Gillham have had students who ignore their intentions until someone in a master class or a guest instructor informs them of the same deficiency. As Lewis stated, this rebellion in postsecondary students could potentially stem from experiences in their early studies.

McPherson (2000) determined that young students rarely view music as a potential career goal, but instead as a fun hobby. This may explain why young students do not see the urgency in applying information, skills, and correction that their instructors reinforce week after week. If students do not see an immediate reward or value in their effort, they may not apply the information (McPherson, 2000). As a result, bad habits and deficiencies could accumulate through the lack of appropriate reinforcement, in addition to psychological blockages that could be potentially carried into their future studies. According to the participants, students pursuing higher education often have the knowledge of correct technique but have made the choice to not internalize the information, either because of laziness, rebellion, discomfort, or a failure to discern future implications.

In the early stages of learning, the joy of playing the instrument provides intrinsic motivation, and the perception of future goals creates extrinsic value (Hallam, 1998, 2013; O'Neill, 1997, 1999, 2002; O'Neill & McPherson, 2002; Suzuki, 1983, 1986, 1989). At this stage of development, students place an "attainment value" on completing tasks correctly in their practicing (O'Neill & McPherson, 2002). Hallam (1997a) determined through research that 60% of beginning, novices, and advanced students left mistakes uncorrected while practicing. This study confirms that many students do not

understand the importance of internalizing technical skills correctly. Watson (2006) explains this concept:

> Finger movements must be repeated many times to generate the initial increased cortical response that underlies the first stage of motor learning. If several incorrect variants are played initially, this will at the very least slow the consolidation of the correct motor sequence, and at worst lead to the firm establishment of an incorrect variant, which may persist for some time as a learned alternative to the correct one (especially if the incorrect sequence is easier to perform). (p. 535)

As many of the participants stated, the violin is a difficult instrument to learn, and the positions and techniques are often complicated for young students to accomplish successfully (Galamian, 1999). Students often choose the more readily attainable or comfortable option, regardless of the incorrect reinforcement and increased potential for future rehabilitation (Rolland, 1974b; Salzberg & Salzberg, 1981; Zweig, 2008). When a skill is executed for the first time, the brain activity is primarily found in the primary motor cortex (Watson, 2006). When the skill is repeated, the level of cortical activity diminishes because of habituation. Through extensive practice and repetition of the skill, the signal in the brain becomes larger and it remains (Karni et al., 1998; Lotze, Schelar, Tan, Braun, & Birbaumer, 2003). Ngai encapsulated this biological principle in his explanation of the "wiring" that takes place between the brain and muscles during repeated reinforcement. Through this concept, the importance of appropriate modeling and demonstration through the Social Development Theory (Vygotsky, 1978) and the sequential acquisition of skills through scaffolding strategies are reinforced.

The discussion of rehabilitation stirred some interesting questions regarding the expectations of students when they enter into postsecondary education. Although Lewis and Wolcott have different perspectives in terms of the function of rehabilitation in postsecondary settings, they both raised the same questions: What should postsecondary instructors expect their students to know when they begin their undergraduate studies? Should specific pedagogical knowledge be reserved for specialized study in postsecondary education, or should the information be internalized in preuniversity instruction? Although these questions are subjective in nature because violin instructors have varied pedagogical priorities, issues concerning preuniversity teacher training and standardized expectations arise. Private music instruction in Canada may be structured through the nationally recognized Royal Conservatory of Music and Conservatory Canada grading systems. These standardized systems provide instructors with set guidelines for student music learning in terms of technique, etude, solo and orchestral repertoire, ear training, and theory/history expectations at every level. Students are required to take exams and they receive a grade to indicate whether they are developmentally capable to proceed to the next level. Although instructors have varied ways in which they approach the material, there are standard expectations established through the systems. Postsecondary violin instructors in the United States may find that the implementation of a system with standardized expectations may increase their first-year students' basic knowledge when they begin their undergraduate studies. Recently, the *American String Teacher Association* has taken this initiative and created the Certificate Advancement Program (*www.astaweb.com*). This program provides instructors in the United States with specific guidelines for repertoire and technique

study, and the examination protocol is similar to that of the Royal Conservatory of Music and Conservatory Canada.

In essence, the participants share similar perspectives in terms of why their first-year students require rehabilitation. Some of the factors include: poor instruction, incomplete dissemination of information, genetics, age, laziness, and a lack of will to change. Violin instructors at the preuniversity level must be aware of possible factors that could inhibit the progress of their students and override these potential threats in their daily teaching. This may involve trying new phrases of communication or experimenting with inventive practice strategies that engage students and parents throughout the learning process. Instructors have the choice to strive for excellence in their profession, where students "establish not only proper playing habits, but develop their capacity to think musically" (McPherson, 2005, p. 30) (Hays, 2012, 2013; Presland, 2005). Wolcott claimed in his interview that "the stars have to be aligned" for the perfect scenario of a great teacher, great ears, genetics, and parental support in the early stages of study. Although this is not a reality for many students, all violin instructors have the responsibility to view their profession as a means to positively affect the lives of their students.

Pedagogical, Physiological, and Psychological Strategies in Rehabilitation

Empiricism: Pedagogical Lineage and Studio Instruction

All of the participants claimed to have been influenced by the pedagogical lineage or legacy set before them. Many of them believe that this knowledge must be passed on to future generations because it exposes students to different schools of philosophies and rationales for making technically/musically informed decisions. Although there are

variations in terms of pedagogical approach, certain empirical traditions have been maintained through sensory observation and experience (e.g., bow hold, left hand position, vibrato, and shifting techniques) (Higgins, 2006; Justus & Hustler, 2005; Lincoln, Lynham, & Guba, 2011; Rink, 2004). It is interesting to note the varied perspectives in terms of how the participants see themselves within a pedagogical legacy. Lewis, Gillham, Gilman, Huang, and Bargerstock come from strong pedagogical traditions, and they all stated that they have a certain responsibility in carrying on the various legacies. This perspective shows a sense of reverence as they view the prior knowledge through a lens of historical significance.

By contrast, Dalbec-Szczesniak, Ngai, Wolcott, Christensen, and Clapp do not see themselves as carrying on such profound lineages (although subconsciously they may), and view their teaching careers modestly through personal self-discovery. Dalbec-Szczesniak addressed an interesting issue regarding the recent rise in technology and travel, which may justify her perspective on pedagogical lineage. She stated that as a result of readily accessible knowledge in the present day, her pedagogical expertise is no longer personal to just her and her students. Through the rise of technology, publications, and travel, pedagogical ideas amalgamate and can be vastly distributed (Persson, 2000). The divided opinions of the participants exemplify the subjective nature of violin instruction as a result of personal experiences and beliefs.

Although many of the participants studied with the same instructors, they all had diverse demographic backgrounds, cultural lenses, personalities, and educational experiences. Haynes (2007) describes the role of instructors, stating, “[The] ultimate concern is trying to approach historical performing . . . even though in striving for

authenticity, [they] are creating something of [their] own, modern through and through" (pp. 226-227). Effective teachers strive to recreate the authentic intentions of composers through creative and flexible communication that is dependent on the circumstances of each individual student (Dunn & Griggs, 2000; Galamian, 1999; Haynes, 2007; Pritchard, 2014). Many of the participants commented on how Galamian was known for covering extensive amounts of repertoire within a lesson, while Bargerstock claimed that Brodsky had a reputation for spending an hour on one measure. There may be both positive and negative potential outcomes with each perspective, although they are equally valid pedagogical approaches to developmental and remedial work.

Both Lewis and Christensen discussed the dangers associated with viewing pedagogical lineages in a dogmatic manner. They believe that there is a risk in taking an approach to the "nth" degree and being militant about maintaining every pedagogical tradition. Christensen claimed that when violin instructors believe that they are "carrying the torch" of a certain pedagogical legacy, it becomes:

> Dogma rather than theory and principle. . . . Galamian is dead, and Ozzie is retiring, and Elaine is dead . . . I can't call them up and take a lesson. So we all, as good students, tend to air on the side of exaggeration in that we are told there is something we are doing wrong. So the teacher says, "Ok, you need to do this with your bow hand," and that sticks with you. And eventually you become a pendulum and you swing too far the other way . . . especially when your teacher dies, your reverent teacher dies, and you remember the things that they [said] and you are trying to preserve that. It becomes a magnifying glass, it gets more and more exaggerated, and I think sometimes you miss out on the other side.

In a similar fashion, Lewis explained how DeLay refrained from writing a pedagogy book because she feared that readers would take her methodology too literally. Like Galamian, she believed that all students are different and require individualized approaches. Suzuki also iterated this point when he informed Alice Joy Lewis that violin instructors should not teach his method but, instead, their own interpretations of Suzuki philosophies. The wisdom and experiences that the participants shared exemplify the multitude of ways in which one may approach pedagogy and remedial work. The individualized nature of rehabilitation is dependent on personal experience, observation, and communication within the social context of studio instruction.

Social Development Theory: Communication and Learning Styles

The participants' remedial pedagogical strategies are informed through their educational and teaching experiences. Some of the participants attributed their early educational success to their instructors' implementation of imitation, demonstration, scaffolding, and effective communication. These experiences not only affected their progress, but now affect their present approaches to rehabilitation. The pedagogical implications of the participants' experiences support the practical use of Vygotsky's (1978) Social Development Theory in violin instruction. All of the participants agreed that when engaging in remedial pedagogy within this social context, they create a learning environment where students feel comfortable to engage in conversations, imitation, demonstration, modeling, and ask questions (Charmaz, 2006; K. Powell, 2006; S. Scott, 2011; Wiggins, 2007).

Every student is different physiologically, emotionally, and cognitively in terms of learning styles, and they all view the world through diverse lenses (Burt & Mills, 2006;

Hallam, 1998, 2002, 2013; Kemp, 1996; McPherson, 2009). Cognitive theorists have continuously viewed cognition and learning with varied philosophies, as a result of these subjective life experiences (Martinez, 2010). Human beings "see the world through [their] schemas" (Martinez, 2010, p. 101), and this concept is paralleled in studio music instruction. Regardless of the tone or connotation of the information presented in lessons, students filter communication through their lens of experience. Lewis referred to this concept as the "psychology of words." According to Lewis, Wolcott, and Gilman, when instructors engage in democratic conversations with their students regarding their learning, students take ownership of their progress, make self-discoveries, and increase their self-actualization throughout the remedial process. They believe that instructors should state their intentions wisely and view teaching in a reciprocal fashion, so that students feel comfortable to express their personal goals and concerns, and feel involved in their own learning (Hallam, 2006; McPherson & McCormick, 2006; B. Smith, 2005).

Effective studio teaching not only consists of modeling by the instructor, but also verbal guides and a combination of the two (Rosenthal, 1984). Through the Teacher Attribution Scaffolding Theory, Kennell (2002) describes an environment where instructors verbalize their intentions and choose pedagogical strategies in an individualized manner. For example, Lewis teaches "the student and not the subject" through "principles in action." Instructors have a responsibility to decipher whether students require direct instructions to push them through the zone of proximal development or a conversation to discuss issues, future goals, and practical strategies (Astington, 2004; Carpendale & Lewis, 2004, 2006; Chesnokova, 2004; K. Powell, 2006; Vygotsky, 1978; Wiggins, 2007). Many of the participants stated that over the years, they

have acquired a greater sensitivity in discerning the developmental thresholds of their students before they feel discouraged (Hallam, 2002; McPherson and McCormick, 2006). As with all rehabilitative work, appropriate feedback from the instructor is crucial for individual learning (Duke & Henninger, 1998, 2002; Hallam, 2006; Kennell, 2002).

In addition to appropriate communication with every student, the participants stated that learning styles also need to be taken into consideration. Learning styles are the diverse ways in which individuals acquire information, specific modes of thinking, and strategies that are associated with learning (Dunn & Griggs, 2000; Pritchard, 2014; Zhukov, 2007). In order to determine learning styles, instructors have to assess how students "remember difficult information most easily–by hearing, speaking, seeing, manipulating, writing or note-taking, experiencing, or again, a combination of these" (Dunn, Beaudry, & Klavas, 2002, p. 76). These strategies are valuable for violin instructors when deciding how to communicate their intentions and organize the remedial information for students in the most encouraging manner.

Lewis capitalizes on the individual learning strengths of his students, with the goal of nurturing their critical listening. He believes that the best students are those who have the fastest ears and not the fastest fingers, because students with keen ears have patience to critically listen and make the necessary changes throughout their remedial journeys. He used an example to illustrate his perspective, stating the following about one of his current students:

> One of his skills . . . he would sit down and read two books a day. So I made a reading list for him, and it turned out to be an amazing thing . . . I would toss in Leopold Auer's book, and I would toss in the *Princess Bride*–because it was one

> of my favourite movies and one of my favourite books–and I gave him some Tolstoy, and that turned him on incredibly. When we would get into the books on technique, I wouldn't lecture him, he would have to give me a verbal book report, because he was a verbal learner . . . I had to assess what type of learner he was, and he was a verbal learner in terms of needing technique. . . . The way that he could absorb fastest was through books.

Through Lewis' example, it is evident that all violin instructors should assess the ways in which their students excel through their individual learning. According to McPherson (2005), "Learners should be exposed to a range of visual, aural, and creative performance skills to help extend and challenge them in different ways, so that they learn how to coordinate their ears, eyes, and hands" (pp. 6-7). In addition, Kemp and Mills (2002) suggest that instructors provide their students with published tests in order to determine their specific learning styles and how they best interpret information. Although these strategies require effort and time commitments from instructors, they can potentially affect the intellectual and emotional progress of students throughout the remedial process.

As the participants strive to nurture personal connections with their students through effective communication and decisions, some also use technology as a way to remain current and relational. Lewis, Wolcott, and Gillham are aware of the presence of technology in the lives of their "millennial" students and encourage the use of smartphones to aid in their learning. Dede (2005) refers to this concept as "neomillennial learning styles," which examine how the knowledge acquisition of students is continually affected by the advancements in technology. Lewis stated in his interview, "The careers that our students will have are going to be slightly different than the careers that we all

have forged in our certain generation because of all of the differences in social media." Hargreaves, Marshall, and North (2003) and Juntunen (2011) echo this concept, stating that violin instructors must be educated in how to best approach teaching and learning in relation to the growing technological advancements.

Through the perspective of Social Development Theory, effective communication, an assessment of learning styles, and an awareness of current issues in the lives of students, nurture lasting mentor-student relationships (Hays, 2013; Kennell, 2002; Penner, 2001; Reid, 2001; Savage et al., 2004). As instructors decipher the developmental thresholds of students and assess their goals through conversations, students take ownership of their learning and become self-actualized. In addition to the importance of social, reciprocal learning, scaffolding strategies and metacognitive analysis are vital aspects of remedial work in postsecondary violin studies.

Scaffolding Theory: Effective Practice Strategies and Metacognition

From their prior instructors, many of the participants acquired effective practice strategies that promote scaffolding and metacognitive analysis. The success associated with scaffolding strategies is affected by the quality of deliberate practice (Ericsson, 2008; Ericsson, Krampe, & Tesch-Romer, 1993; Krampe & Ericsson, 1995; Lehmann & Ericsson, 1997; Pitts, Davidson, & McPherson, 2000; Williamon & Valentine, 2000). Deliberate practice has been described as "that which achieves the desired end-product, in as short a time as possible, without interfering negatively with longer-term goals" (Hallam, 1997b, p. 181). As students engage in deliberate practice, they develop the self-teaching activity of metacognitive analysis (E. Jorgensen, 1997). This increases their ability to critically analyze their playing, decide which exercises are most effective for

certain passages, and solve their own technical/musical problems (Hallam, Rinta, Varvarigou, Creech, Papageorgi, Gomes, & Lanipekun, 2012; E. Jorgensen, 1997; H. Jorgensen, 2000; Koopman, Smit, De Vugt, & Deneer, 2007; Metcalfe & Shimamura, 1994; Wiggins, 2007). Hallam (2001) states that students engaging in metacognition:

> [Must] recognise the nature and requirements of the particular task; identify particular difficulties; have knowledge of a range of strategies for dealing with these problems; know which strategy is appropriate for tackling each task; monitor progress towards the goal, if progress is unsatisfactory acknowledge this and draw on alternative strategies; evaluate learning outcomes in performance contexts and take action as necessary to improve performance in the future. (p. 29)

This pedagogical strategy increases self-awareness and personal assessment (Hallam, 2001). Clapp, Lewis, Ngai, and Bargerstock stated that they advocate effective practicing and time management with their postsecondary students. Lewis learned through his studies with Suzuki and DeLay, the dangers of robotically over-practicing passages day after day. He now encourages his students to engage in focused listening, decision-making, and time management, so that they are mindful in the practice room. This level of focus decreases the threat of reinforcing deficiencies or habits (Barry, 1992; Barry & Hallam, 2002; Duke, Simmons, & Cash, 2009). Flesch (1930) argues that "all technical skills . . . should be practiced in small quantities, but very frequently, to achieve mastery" (p. 82). In a similar fashion, Bargerstock encourages her students to practice short vibrato exercises every day for only five minutes. They engage in metacognitive analysis because they have to decide which exercises would most effectively help them, and focus intently

for a short amount of time.

This phenomenon of concise, focused practicing highlights the concept of interleaved practicing (Lin, Chiang, Knowlton, Iacoboni, Udompholkul, Wu, 2013; Nielsen, 2001). According to Chaffin and Lemieux (2004), "Once a piece is learned, it is easy to fall into mindless practice because the piece can be played automatically, without attention" (p. 23). In order to counteract the phenomenon of habituation and decreased brain activity through extensive repetition, passages can be labeled with a two or three minute time limit (Carter, 2013). This random approach encourages efficient decision-making, metacognition, focused attention, and time management (Byo & Cassidy, 2008; Carter, 2013).

In a recent quantitative study, researchers determined that "learning skills in an interleaved manner evokes different levels of inter-regional connectivity in the human brain compared with when those skills are learned in a repetitive manner" (Lin et al., 2013, p. 10). In a similar study, Stambaugh (2011) determined that random practice yielded better retention in students than those who implemented a blocked practice method of extensively repeating passages. For students engaging in rehabilitative pedagogy, this strategy could effectively reinforce skills and allow students to work on many different facets of their technique in short periods of time. In addition, students have to be cognitively active in their practice routine. The participants stated that students who take ownership of their rehabilitative work progress quickly, feel motivated by their improvements, gain self-efficacy, and then take on new challenges in a more pragmatic manner.

Through empirical research and the participants' educational and teaching experiences, metacognitive analysis is essential for both young students and those engaging in remedial pedagogy. According to McPherson (2005), self-analysis encourages the following benefits in young students:

> Asking pupils to reflect on what they are doing, how they are doing it, and to consider alternative approaches to performing would go a long way to improving music instruction, by helping children who find their learning frustrating and difficult and who typically fall behind or do not survive the first few years of learning. (p. 29)

Violin instructors at the preuniversity and postsecondary level must guide their students' practicing at home, since lesson interaction is limited to 30-60 minutes per week. As Lewis stated, it is ineffective if instructors simply say "fix this at home" without any further guidelines, ideas, or strategies in terms of how to approach an issue. Students should acquire these strategies when they are young, in order to take ownership of their learning and face challenges through active engagement (McPherson, 2005; McPherson & Zimmerman, 2002). As students mature, they "learn to practice more effectively as their skills develop . . . [as] there is ample evidence that [the] use of more effective practice strategies results in faster and better learning" (Williamon, 2004, p. 23). Fisher's (2004) book, *Practice*, contains helpful ideas that can be transferred to all levels and types of repertoire. According to the participants, the implementation of scaffolding strategies and metacognitive analysis affects the self-efficacy and motivation of students.

Attribution Theory: Self-Efficacy

Self-efficacy is associated with the degree to which students believe in their abilities to reach desired goals (Bandura, 1989; Pajares & Schunk, 2001; Stipek, 2002). Pajares (1996) states that "self-efficacy beliefs act as determinants of behavior by influencing the choices that individuals make, the effort they expend, the perseverance they exert in the face of difficulties, and the thought patterns and emotional reactions they experience" (p. 325). Some of the participants stated that their students respond well to remedial information because they are emotionally stable, and they can tangibly feel and hear their improvements. Others stated that their students resist the information because it challenges their egos and self-perceptions as violinists. Both Dalbec-Szczesniak and Christensen claimed that their first-year students' sense of self-efficacy is often out of touch with reality. According to Kingsbury (2010), when students begin their postsecondary studies, their sense of reality is challenged because they realize that their musical talents no longer set them apart amongst their peers.

The Attribution Theory illustrates this issue of self-efficacy through the students' perceptions of themselves, their successes, failures, and tendencies to repeat certain behaviours (Weiner, 2006). According to Burland and Pitts (2007), "The influences of personality, previous experience and expectations of education are evident in students' attitudes to learning, and these factors also have a role to play in shaping students' levels of motivation" (p. 297). Most of the participants stated that they are mindful of their students' levels of motivation throughout the remedial process, as this affects their perseverance. Lewis, Wolcott, Gillham, and Gilman combat this challenge by

maintaining a nonjudgmental environment within their teaching studios. As students attempt new tasks, their sense of self-efficacy combines with feelings of competence and challenge, and they feel safe both physically and psychologically (Bandura, 1989). In addition, students are able to emotionally disconnect themselves from their deficiencies and view correction as a springboard for experimentation. Through this perspective, rehabilitative tasks are viewed as techniques that can be explored in a different manner, while maintaining their sense of self-worth (Zweig, 2008). Many of the participants also stated that they encourage and nurture relationships within the string studio. As students undergo the remedial process together, they vent their emotions, share their coping strategies, and encourage one another (Dibben, 2006; Pitts, 2003). According to Burt and Mills (2006), although students agree that formal feedback helps them improve, informal comments from their peers carry more significance.

Even within a nonjudgmental environment, students may remain dependent on their instructor's approval and be sensitive to correction (Atlas et al., 2004; Burt & Mills, 2006; McPherson & McCormick, 2006). According to Hallam (2002), students carry expectations into the music studio regarding their performance abilities:

> When people approach a task they form expectations about how well they think they will be able to carry out that particular task. Such expectations will be based on their previous performance. . . . Beliefs about self-efficacy are tied to particular tasks and depend on how we explain to ourselves our previous successes and failures. (pp. 237-238)

According to Kemp and Mills (2002), students who invest in their craft often find it difficult to separate their personal identity from their music making. As a result of this

close connection between personal identity and self-efficacy, any type of setback, criticism, or poor performance is perceived as a direct attack on themselves (Davidson, 2002; Duke & Henninger, 1998; Gabrielsson, 2003; Kemp & Mills, 2002; Kingsbury, 2010). In response to sensitive students, Wolcott bases his pedagogical approach on the Galamian principle of discerning the balance between challenge and encouragement. Lewis and Huang also capitalize on this principle by viewing rehabilitative work as enhancement. This is crucial for instructors as they assess the technical and psychological circumstances of students.

While this healthy environment is ideal and encouraged by the participants, students frequently compare themselves to their peers, which results in feelings of inadequacy (Burland & Pitts, 2007; Kingsbury, 2010; Pitts, 2002, 2003). Lewis stated, "Students will always [be] put in a pecking order–a hierarchy of who plays." Burt and Mills (2006) further explain this issue:

> The students' first performance in front of their peers is a crucial pivot point. . . . This event is also highly important in that the consequences of not completing it in the first term may lead to continued and augmented fears of performing in front of esteemed peers, leading to a potentially damaging transition into undergraduate life. (p. 67)

Many of the participants addressed this issue when discussing the emotional effects of remedial work, the degree expectations, and the presence of the upperclassmen. Although this is a reality, Lewis believes that the personal connections created within the string studio humanize the inherently competitive music world. Violin instructors should be sensitive to the possibly fragile emotions of their students, in addition to the competitive

atmosphere present within their string studios.

Throughout the remedial process, many of the participants believe that students become self-actualized and understand their abilities and limitations as violinists. According to Hallam (2002), "Self-actualisation explains human creativity, our constant attempts to improve and change and our attempts to maintain and enhance our self-esteem. These self-developments are influenced strongly by environmental factors in the form of feedback given by others" (p. 228). Through positive feedback from the instructor, encouragement from peers, and tangible evidence of improvements through recordings, students acquire self-confidence, critical analysis, and motivation (Daniel, 2001). Burland (2005) determined through a longitudinal study that students who have goals, motivation, and problem-solving coping strategies are more likely to demonstrate high self-efficacy and confidence in their abilities. Although this sense of self-efficacy has the potential to increase in students who engage in remedial work within a healthy environment, challenges surrounding the psychological health of students often arise.

Psychology of the Student

Through their own personal remedial experiences, the participants understand the psychological struggles that accompany physical changes. Wolcott stated that throughout his postsecondary remedial work, "Everything was technical or physical. No one unfortunately tried to rehabilitate me psychologically." This statement raises intriguing issues surrounding rehabilitation and the level of psychological guidance from violin instructors. Although the books, *The Inner Game of Tennis* and *The Inner Game of Music* have received attention in recent years when addressing performance anxiety, Wolcott claimed that the book, *Mental Toughness Training for Sports* had a profound impact on

his life. James Loehr (1982) states, “The link between our minds and our bodies is dramatically clear within the competitive arena” (p. 2). This simple statement describes the daily challenges students face while engaging in rehabilitation, as they lack a mastery of skills within the competitive postsecondary environment. Through a personal example, Loehr (1982) illustrates how negative self-talk plagues those in high stress performance situations:

> I was bound and determined to succeed . . . nothing would stand in my way. I wanted to prove to myself and to everyone else that I could do it. My answer was simple: *try harder* and *be stronger.* No one ever told me that trying *softer*, not harder, might be the key, or that inner calmness would bring strength. The anger, frustration, agony, and disappointment were not so much from losing as from knowing that I performed considerably below what I was capable of doing. When I wanted it most, I was incapable of performing well. And the reason is now clear–I tried *too* hard; I was forcing it. (p. 5)

This exemplifies the concept that the harder one tries, the further one repels the goal or reward. Christensen claimed in his interview that his most challenging experiences as an instructor occur when students try too hard and they unknowingly repel their natural abilities to execute skills.

Wolcott believes that all violin instructors should be educated in how to help their students with psychological rehabilitation. As students alter their physical approach to the instrument through remedial work, their psychology and emotions are affected. They are expected to change a skill or position that has been reinforced for many years. Performance anxiety and insecurities often increase as the violin feels foreign, and first-

year students are expected to play with technical prowess and musical conviction in master classes and recitals (Brotons, 1994; Clark & Agras, 1991; Kenny, 2005; Kenny & Osborne, 2006; Osborne & Franklin, 2002; Steptoe, 2001).

Performance anxiety is defined as "the experience of persisting, distressful apprehension about and/or actual impairment of performance skills in a public context, to a degree unwarranted given the individual's musical aptitude, training, and level of preparation" (Salmon, 1990, p. 3). This is "highly detrimental to musicians requiring dexterity and fine muscular control over their instruments" (Valentine, 2002, p. 168). The symptoms of shaking, sweaty hands, stiffness, negative thoughts, and low self-esteem affect a musician's ability to communicate with an audience, and impair the execution of technical skills (Steptoe & Fidler, 1987; Williamon, 2004; Wilson & Roland, 2002; Wrigley & Emmerson, 2013). With regards to skill mastery, Williamon (2004) claims, "Anxiety is likely to be lower when the person is well prepared or finds the task simple, than when he or she is under-rehearsed or when the task is complex" (p. 11). When students engage in rehabilitative pedagogy, technical/musical skills are uncomfortable, and students often experience increased stress, negative thoughts, and doubts (Brotons, 1994; Wilson, 2002). Loehr (1982) further explains this concept:

> Performing toward the upper range of your talent and skill day after day and year after year requires two things. The first is good technique and form. . . . If your technique is poor, no matter how mentally tough you are, performance inconsistencies will persist. The second element for consistency in performance is good mental skills. The mentally tough competitor is consistent in performance

> precisely because he is consistent psychologically. Ups and downs in performance are often directly traceable to psychological ups and downs. (p. 10)

Through a music performance perspective, Loehr (1982) emphasizes the need for effective muscle memory and reinforcement through appropriate early instruction. When the motions are automatic and loose, athletes and musicians perform at their best; when "trying not to be nervous, [and] trying not to be afraid rarely produces the results you want" (Loehr, 1982, p. 60).

In order to combat negative thoughts and criticisms, Loehr (1982) believes that mental thought processes need to include positive reinforcement, and one has to become mindful of the present moment in every activity. Loehr (1982) claims, "We fail to be *MINDFUL* as we perform. Our thoughts are constantly drifting forward or backward in time to such things as past mistakes, winning or losing, what people will think . . . and what will happen 'if'" (p. 77). According to Loehr (1982), when performers focus on the moment, there is sufficient time to accomplish tasks. This ties into the Alexander Technique of having an awareness of every motion in the present moment and assessing the most optimal positions for success (De Alcantara, 1997).

An empirical study conducted by Fehm and Schmidt (2006) examined various coping strategies used by music students suffering from performance anxiety. Among the nonpharmacological strategies include, "Alexander technique, hypnosis, massages, yoga, positive self-instruction, relaxation techniques, and special practicing techniques" (p. 101). Along with these coping strategies, musicians increase their potential for success when they visualize their performances and take risks (Loehr, 1982; Papageorgi, Hallam, & Welch, 2007). Christensen paralleled this concept when discussing his Alexander

Technique training, and stated that musicians need to take risks and learn from their mistakes. Although postsecondary students should view rehabilitation this way, Williamon (2004) states, "The perception of threat is usually linked to an overestimation of the severity of the feared event, an underestimation of coping resources (i.e., what can be done about it), or an underestimation of rescue factors (i.e., what other people can do to help)" (p. 11). The threat of being wrong challenges one's ego and pride, and is often avoided for this very reason by both students and professionals.

Although applied music instructors often witness performance anxiety in their students, they do not necessarily have the skills to manage the issues (Patston, 2014; D. Powell, 2004). Violin instructors at the postsecondary level should offer coping suggestions for their students throughout the remedial process, foster supportive relationships through effective communication, and maintain a joy for playing the instrument (Burland & Pitts, 2007; Kennell, 1997, 2002). Athletes attribute joy as the energy source in their best performances, and this concept can be paralleled in music education (Loehr, 1982). Loehr (1982) explains, "The source of energy was not anxiety, fear, anger, or frustration. On the contrary, the one word that captured the energy source best . . . was *JOY*. Feelings of enjoyment and fun and loving what they were doing" (p. 30). According to the participants, joy and a love for the instrument inspire first-year students to persevere through their rehabilitative work. This motivation then leads to greater psychological health, increased self-efficacy, and higher artistic achievements. As this concept of psychological rehabilitation gains in popularity, courses should be offered at every postsecondary institution, through sports psychology. This should also be a topic within string pedagogy courses and private studio instruction.

In addition to performance anxiety coping strategies, some of the participants addressed the importance of emotional investment in their students. Lewis and Ngai elevated the importance of mentor-student relationships (Hays, 2012, 2013). Through the influences of DeLay and Suzuki, Lewis invests in the lives of his students. He was sincerely emotional in his interview when discussing the blasé attitude that some instructors have towards teaching, and how they unknowingly affect the psychology of their students. Lewis shared specific examples of how he helped students deal with traumatic life experiences and became, as he says, a "teacher of life." In a similar manner, Ngai claimed that when students are psychologically distressed, he changes his role from being a violin teacher to a counsellor. Both Ngai and Lewis willingly take on the responsibility of being the adult figure in the lives of their university students, as they deal with postsecondary pressures and cope with life. As a result, students establish a sense of trust in their instructors, a comfort zone before they engage in the remedial work, and an emotional support system as they encounter postsecondary challenges.

Challenges for Students Adjusting to Postsecondary Education

In addition to the psychological blockages that can arise throughout the rehabilitation process, the participants are aware of the postsecondary pressures and expectations that their first-year students encounter. According to Burland and Pitts (2007), "Students' attitudes to university learning are inevitably shaped in part by their school experiences, and by their expectations of university life, both academically and socially" (p. 295). Researchers have acknowledged that the experiences students endure throughout their first year of postsecondary education affect their commitment in future studies (Pascarella & Terenzini, 2005; Upcraft, Gardner, & Barefoot, 2005). While many

first-year performance students engage in rehabilitative work to improve their technical/musical abilities on the violin, they also face academic, social, and performance pressures.

In postsecondary performance programs, first-year students often feel pressured to meet a certain artistic level promptly in their undergraduate studies, amongst competitive peers (Bernstein, 2001; Burland & Pitts, 2007; Burt & Mills, 2006; Lowe & Cook, 2003; K. Smith, 2002). Williamon (2004) states, "Today's performers are increasingly held to exacting standards and required to meet a host of diverse expectations" (p. 9). The pressures to meet these high expectations not only affect students, but also instructors. Christensen stated that while it would be easier to take some students back to the beginning stages, he is not able to do so with the established degree requirements and deadlines. In a similar fashion, Ngai and Huang claimed that they often struggle with giving their students repertoire that "teaches to the jury," regardless of the need for remedial work. This highlights the need for appropriate instruction in the early stages of learning because students do not have the time to engage in extensive rehabilitation in postsecondary studies. They are expected to make technical changes, practice effectively, perform in master class, and pass juries/recitals without a complete mastery of skills. As a result, a cycle of performance anxiety, doubts, low self-efficacy, and poor performances could be established (Burt & Mills, 2006; Hargreaves et al., 2003).

Although degree expectations are apparent, researchers have suggested that postsecondary instructors should be sensitive to the goals and needs of their students, and assess achievement on a personal level (Hallam, 2002; Winterton & Russ, 2009). McInnis, James, and McNaught (1995) argue the following point:

> The central problem for teaching and learning in the face of increasing diversity in the student population is that of aligning institutional goals with individual needs. . . . Universities and academics have a responsibility to respond to the problematic nature of the transition process, especially in the face of the wider range of student abilities and experiences. (p. 3)

This statement describes the varied levels of pedagogical and performance knowledge that first-year students have when they enter postsecondary studies. When instructors adhere to the individualized needs of their students, they help to alleviate some of the inherent external pressures (McInnis et al., 1995; McPherson & McCormick, 2006).

In addition to performance expectations, students are also expected to reach high academic standards and find a niche as social beings (Lowe & Cook, 2003; Parker, Summerfeldt, Hogan, & Majeski, 2004). In an empirical study by Arthur and Hiebert (1996), the persistence and stress of academic demands caused first-year postsecondary students to feel inadequately prepared with their workload, task difficulties, performance expectations, and peer pressures. In their interviews, Dalbec-Szczesniak, Wolcott, and Lewis transparently discussed the struggles they endured when adjusting to postsecondary life and the feelings of inadequacy that threatened their self-confidence. As Lewis stated, students often learn how to do laundry for the first time, cope with being away from home, deal with competitive surroundings, and learn time management skills. Although these experiences are stressful, students eventually mature, and learn how to cope with the demands of undergraduate studies (Arthur, Hiebert, & Waters, 1994; K. Smith, 2002; Van der Meer, Jansen, & Torenbeek, 2010). Dalbec-Szczesniak illustrated this point through the recollection of her own personal postsecondary experiences. She

claimed that in her third and fourth years of study, she finally felt at ease and was able to implement the technical/musical information that her teachers presented to her.

First-year postsecondary students often face academic, social, and performance pressures, in addition to their remedial work. These challenges highlight the importance of correct early development because students are expected to meet degree expectations, make rehabilitative progress, and showcase artistic abilities in performance, often without a mastery of skills. Not only are these expectations stressful for undergraduate students, but also for instructors as they learn how to communicate, choose appropriate repertoire, and assess how to proceed through the remedial work with external institutional deadlines in their peripheral view.

Challenges for Instructors when Implementing Remedial Pedagogy

All of the participants described instances in their teaching careers when rehabilitative pedagogy was counterproductive. Many of the participants claimed that some first-year students begin their postsecondary studies with mental blockages, attitudes that they do not need to change anything, or resistance to any form of correction. According to Rolland (1974b), remedial work is challenging for both students and instructors:

> As stated by Carl Flesch, progress depends *first* of all on the awareness and eradication of one's faults and weaknesses, and only *second*, on the learning of new materials and repertoire. Unfortunately the first requisite is not nearly as popular with students as is the second, and many students and teachers are reluctant to deal with problems, which do not produce immediate results. (p. 179)

The will to want to change is dependent on the student's perception of motivation, self-efficacy, and success at a given task, and how instructors assess the need for correction (Kennell, 2002; McPherson & McCormick, 2006). Through the wisdom of DeLay, Lewis learned that students only make changes when issues become important to them. This ties into the student's level of self-efficacy because as Lewis stated, if the student feels worthless as a violinist, the rehabilitative pedagogy will always be counterproductive. Rolland (1974b) parallels this perspective:

> The degree of success in remedial work depends largely upon the desire and cooperation of the student to change his ways, and also on the degree of habituation of faulty patterns. Therefore the teacher's first task is to offer a vivid idea of what is needed for improvement and to motivate the student, so that he becomes convinced that changes are necessary. As is the case with psychoanalysis, unless the subject is anxious and willing to undergo and affect a change, there is little hope for success. (p. 179)

Remedial work challenges the psychological threshold of every student in a different way, and instructors have to assess this on an individual basis (Galamian, 1999; Rolland, 1974b).

Huang, Gilman, Lewis, and Ngai stated that students often resist remedial work when they are impatient with their progress, want to proceed through the repertoire without a mastery of skills, and believe that they are technically above the need for etude study. This is frustrating for instructors because they have to contend with the attitude and will of the student, regardless of their best intentions. Hallam (2002) states that students "may develop a variety of coping strategies to maintain self-worth, some of

which may be self-defeating, for instance, reducing effort" (pp. 240-241). Students may rebel as a coping mechanism to protect their pride, self-esteem, and fear of failure (Covington, 1984).

Hidi (2000) believes that when students are interested in a specific learning situation, they show more focus, increased cognitive functioning, psychological investment, and perseverance. Some of the participants discussed this concept when explaining the repertoire and etude choices that they provide their students, and the democratic conversations that they engage in within their studios. According to Renwick and McPherson (2002), instructors who gauge their students' interests by giving them choices create superior learning outcomes through increased metacognitive practices (Renwick & McPherson, 2002). Although students may resist learning specific etudes, a list of possible choices may increase their interest and future success.

In addition to the challenge of convincing students that remedial work is necessary, Huang stated that many first-year students do not implement the information on their own, or fail to transfer the remedial tasks to their repertoire. She claimed that the students at her institution require a lot of guided instruction and do not reach their full potential as musicians. According to Burt and Mills (2007), students often need teacher dependence, and "this may not be entirely due to laziness but, rather, to a lack of experience in defining appropriate strategies for independent learning" (p. 297). This issue addresses the level of metacognition that students are encouraged to engage in prior to their postsecondary studies. By contrast to Huang's frustration with a lack of effort, Christensen and Bargerstock stated that they often experience the opposite with their students. They both claimed that the students who have the most debilitating physical and

psychological hindrances desire the remedial information the most. This stirs convictions because every student, regardless of their circumstances, deserves appropriate instruction, effort, and encouragement at every stage of their musical development (Brenner, 2010a; E. Jorgensen, 2003).

The challenges that arise through remedial work emphasize the importance of correct early development. The participants stated that when students begin their postsecondary studies, they are often psychologically affected by their early educational experiences. They may resist the remedial work or believe that they are above the need for correction. Although this may create friction between the student and the instructor, there are positive outcomes through the remedial process that overshadow the everyday challenges.

Successful Outcomes Through Rehabilitation

The participants agreed that as students acquire the technical knowledge required to play the violin, they become individual artists with increased musical freedom. They stated that their students have different goals and aspirations in life, as the music world now offers a variety of artistic avenues. The conventional ideals of a "musician" are being increasingly broadened to focus on more individual artistic endeavours (Bennett, 2007; Burland & Pitts, 2007). As a result, the participants do not view rehabilitation as a means to create "carbon copies" of concert performers, but instead as a way to instil valuable pedagogical knowledge. Regardless of the students' future plans in music, they attain skills throughout the remedial process that have the potential to affect the next generation of musicians. It is imperative that students carefully consider the importance

of absorbing this remedial knowledge so that they do not transfer their deficiencies or lack of pedagogical understanding to their future students.

Limitations of the Study

Due to the nature of this study, the small number of participants, and the specific criteria for participation, the opinions expressed cannot be generalized to represent the practices of all violin instructors in North America. Through the recruitment, there is some degree of error as a result of the selection process, including: the use of a random table of numbers, and the categorization of degree-granting institutions based on the directory that I used. The supplemental data sources and lack of observation throughout the data collection limit the breadth and depth of information that I could have collected over an extended period of time. In addition, I investigated the concept of remedial pedagogy only through instructors' perspectives, as opposed to students' perspectives and experiences.

Implications for Future Research

The participants addressed pedagogical concepts that stirred questions for potential future research within the field. All of the participants stated that they had technical issues that they needed to overcome in their preuniversity and postsecondary studies, including: posture, bow holds, shifting, vibrato, and left hand facility. Eight of the participants believe that they needed rehabilitation because of inadequate early instruction. While Lewis underwent "enhancement therapy" with DeLay, Gillham attributed his rehabilitation to his own laziness. This raises questions about the quality of instruction and whether it has increased or decreased over time: Has the dissemination of knowledge provided instructors with greater pedagogical expertise? And if so, why is

there still inappropriate instruction leading to the need for rehabilitation? Is rehabilitation inevitable in postsecondary education, regardless of technical/musical proficiency?

The majority of the participants claimed that although their personal technical issues were challenging to overcome, their psychological rehabilitation was much more damaging than their physical rehabilitation. They experienced low self-esteem, feelings of inadequacy, debilitating performance anxiety, and frustration as they compared themselves to their peers. These personal experiences have left many of them with strong convictions regarding their communication and interaction with students when addressing remedial work. This is an intriguing concept and initially not intended to be explored through this study. Future research could examine the psychological effects of rehabilitation from a student perspective, including coping strategies, perception of change, and motivation.

When implementing remedial pedagogy, the issues of rebellion and resistance in students also raise questions that could be further explored: What causes this type of rebellion in students? Is it the clash of personalities between the instructor and the student? Is it a lack of correction or over-indulgence of praise from their prior instructors? Is it a lack of exposure to other students and teachers? When students make the choice to study violin performance in their postsecondary education, why do they expect to know everything before they begin? How do the psychological blockages manifest, in the sense that students inherently believe that their instructors cannot help them? Throughout the remedial process, violin instructors have the difficult task of deciphering every individual student's psyche and determining the most effective means to affect change. Ngai claimed that in his postsecondary education, he did not reach the

goals that his instructors had for him, but they planted seeds for future experimentation and contemplation. This issue stirs questions in terms of assessment and time within the remedial process: How does one assess the psychological threshold of a student? How does one determine if it is a psychological issue or a physical impairment that is blocking the student's progress? How does the length of time spent on a remedial task affect the psychology of the student?

Further research is required to examine the pedagogical incongruity between preuniversity and postsecondary instructors, the effectiveness of specific remedial strategies, the differences in academic expectations placed on performance and education majors, and the psychological/physiological struggles that emerge throughout the remedial process from the perspective of postsecondary performance students.

Conclusion

Different facets of pedagogical and personal influences affect the rehabilitation process. These varied influences can potentially create a positive or negative cycle. First-year postsecondary students are affected psychologically by the nature of their early instruction: whether they received correct guidance, within a positive learning environment, with appropriate parental support. The psychological effects of their early education are carried with them into their postsecondary studies. Students are then affected by the ways in which their postsecondary instructors communicate with them, provide feedback, and approach correction pertaining to their individual learning styles. In turn, their self-efficacy, psychology, and motivation are affected either positively or negatively.

When violin instructors are sensitive to the psychological makeup of their students, the students experience an increased sense of self-efficacy, become more self-actualized, and acquire a healthy psychological perspective of their rehabilitation. Students become motivated to continue through the remedial process, trust their instructors, feel encouraged by their peers, and take ownership of their learning. In addition, they acquire effective practice strategies by actively engaging in metacognitive analysis, and experience a positive feedback loop of hearing and feeling tangible improvements through their effort. This could increase their perseverance to proceed to more difficult tasks, further trust their instructor, and gain technical/musical artistry.

When students endure negative experiences in their early studies, they may carry a poor attitude into their postsecondary education and resist rehabilitative pedagogy. Through this resistance, they may experience a decreased level of confidence as a result of their rebellion and lack of improvement. This may also increase their chances of developing performance anxiety, emotional blockages, and technical/musical obsessions. This positive or negative cycle could potentially affect students' lives in postsecondary education, in terms of how they accumulate technical/musical skills, cope with stress, and adapt as social beings. This reveals that it is the responsibility of preuniversity and postsecondary instructors to mentor, guide, and instil meaningful knowledge in individualized ways for all students at every level of proficiency.

REFERENCES

Acker, S. (2000). In/out/side: Positioning the researcher in feminist qualitative research. *Resources for Feminist Research, 28*(1/2), 189–208.

Adachi, M. (1994). The role of the adult in the child's early musical socialization: A Vygotskian perspective. *The Quarterly Journal of Music Teaching and Learning, 5*(3), 26–35.

Agar, M. (1980). *The professional stranger: An informal introduction to ethnography*. San Diego, CA: Academic Press.

Alexander, F. M. (1910). *Man's supreme inheritance.* London, United Kingdom: E. P. Dutton and Company.

Alexander, F. M. (1923). *Constructive conscious control of the individual.* Downing, CA: Centerline Press.

Alexander, F. M. (1932). *The use of the self: Its conscious direction in relation to diagnosis, functioning and the control of reaction.* New York, NY: E. P. Dutton and Company.

Alexander, F. M. (1941). *The universal constant of living.* Long Beach, CA: Centerline Press.

American Psychological Association. (2010). *Publication manual of the American Psychological Association* (6th ed.). Washington, DC: Author.

Angen, M. (2000). Evaluating interpretive inquiry: Reviewing the validity debate and opening the dialogue. *Qualitative Health Research, 10*(3), 378–395. doi: 10.1177/104973230001000308

Arney, K. (2006). *A comparison of the violin pedagogy of Auer, Flesch, and Galamian:*

Improving accessibility and use through characterization and indexing (Unpublished master's thesis). University of Texas, Arlington, TX.

Arthur, N., & Hiebert, B. (1996). Coping with the transition to postsecondary education. *Canadian Journal of Counselling, 30*(2), 93–104.

Arthur, N., Hiebert, B., & Waters, J. (1994). *Age influence on the demands and coping strategies of postsecondary students.* Paper presented at the annual meeting of the American Education and Research Association, New Orleans, LA.

Astington, J. (2004). What's new about social construction? Distinct roles needed for language and communication. *Behavioral and Brain Science, 27*(1), 96–97. doi: http://dx.doi.org/10.1017/S0140525X04220039

Atlas, G., Taggart, T., & Goodell, D. (2004). The effects of sensitivity to criticism on motivation and performance in music students. *British Journal of Music Education, 21*(1), 81–87. doi: http://dx.doi.org/10.1017/S0265051703005540

Auer, L. (1921). *Violin playing as I teach it.* New York, NY: Frederick A. Stokes Company.

Auer, L. (2007). A method without secrets. In F. Martens (Ed.), *Violin Mastery: Interviews with Heifetz, Auer, Kreisler and Others* (pp. 8–14). New York, NY: BiblioBazaar.

Austin, J., & Vispoel, W. (1998). How American adolescents interpret success and failure in classroom music: Relationships among attributional beliefs, self-concept and achievement. *Psychology of Music, 26*(1), 26–45. doi: 10.1177/0305735698261004

Baader, A., Kazennikov, O., & Wiesendanger, M. (2005). Coordination of bowing and fingering in violin playing. *Cognitive Brain Research, 23,* 436–443.

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory.* Englewood Cliffs, NJ: Prentice-Hall.

Bandura, A. (1989). Self-regulation of motivation and action through internal standards and goal systems. In L. Pervin (Ed.), *Goal concepts in personality and social psychology* (pp. 19– 85). Hillsdale, NJ: Erlbaum.

Barber, B. (1993). Traditional & Suzuki teaching: A comparison. *American Suzuki Journal, 22*(1)*,* 33–39.

Barrett, C. (1995). *The magic of Matsumoto: The Suzuki Method of education.* Palm Springs, CA: ETC Publications.

Barry, N. (1992). The effects of practice strategies, individual differences in cognitive style, and gender upon technical accuracy and musicality of student instrumental performance. *Psychology of Music, 20,* 112–123.

Barry, N., & Hallam, S. (2002). Practice. In R. Parncutt & R. McPherson (Eds.), *The science and psychology of music performance: Creative strategies for teaching and learning* (pp. 151– 165). New York, NY: Oxford University Press.

Barry, N., & McArthur, V. (1994). Teaching practice strategies in the music studio: A survey of applied music teachers. *Psychology of Music, 22*(1), 44–55. doi: 10.1177/0305735694221004

Bauman, S. (1994). *In search of the Japanese spirit in Talent Education*. Miami, FL: Summy-Birchard.

Beegle, J. (1999). Music learning research & the Suzuki Method - Part I: Every child can learn. *American Suzuki Journal, 28*(1), 71–78.

Beegle, J. (2000). Music learning research & the Suzuki Method - Part II: Teaching in Suzuki way. *American Suzuki Journal, 28*(2), 88–93.

Bennett, D. (2007). Utopia for music performance graduates. Is it achievable, and how should it be defined? *British Journal of Music Education, 24*(2), 179–189. doi: http://dx.doi.org/10.1017/S0265051707007383

Berg, L., (2008). *Qualitative research methods for the social sciences* (8th ed.). Boston, MA: Allyn & Bacon.

Bergee, M., & Grashel, J. (2002). Relationship of generalized self-efficacy, career decisiveness, and general teacher efficacy to preparatory music teachers' professional self-efficacy. *Missouri Journal of Research in Music Education, 39*, 4–20.

Berk, L., & Winsler, A. (1995). *Scaffolding children's learning: Vygotsky and early childhood education.* Washington, DC: National Association for the Education of Young Children.

Bernstein, S. (2001). To what degree should we go? *Piano & Keyboard, 208,* 45–49.

Biddle, J. (2010). Reciprocal learning in leadership. *ReSource*, 17–19.

Biggs, J. (1987). *Student approaches to learning and studying*. Hawthorn, Australia: Australian Council for Educational Research.

Blaikie, N. (2007). *Approaches to social enquiry* (2nd ed.). Malden, MA: Polity Press.

Boeije, H. (2002). A purposeful approach to the constant comparative method in the analysis of qualitative interviews. *Quality and Quantity, 36*(4), 391–409. doi: 10.1023/A:1020909529486

Boell, S. K., & Cecez-Kecmanovic, D. (2010). Literature reviews and the hermeneutic

circle. *Australian Academic & Research Libraries, 41*(2), 129–144. doi: 10.1080/00048623.2010.10721450

Bogdan, R., & Biklen, S. (2006). *Qualitative research for education: An introduction to theories and methods* (5th ed.). Boston, MA: Allyn & Bacon.

Brandstrom, S. (2000). For whom is music education intended? *Bulletin of the Council for Research in Music Education, 147*, 36–39.

Bransford, J., Brown, A., & Cocking, R. (Eds.). (2000). *How people learn: Brain, mind, experience, and school: Expanded edition*. Washington, DC: National Academy Press.

Brenner, B. (2010a). Reflecting on the rationales for string study in schools. *Philosophy of Music Education Review, 18*(1), 45–64.

Brenner, B. (2010b). A unique collaboration: The Fairview Elementary School string project. In Ann Clements (Ed.), *Alternative approaches in music education: Case studies from the field.* (pp. 201–212). Lanham, MD: MENC: The National Association for Music Education.

Bresler, L. (1994). Music in a double-bind: Instruction by non-specialists in elementary schools. *Arts Education Policy Review, 95*(3), 30–36. doi: 10.1080/10632913.1994.9936375

Bresler, L., & Stake, R. (1992). Qualitative research methodology in music education. In R. Colwell (Ed.), *Handbook of research on music teaching and learning* (pp. 75–90). New York, NY: Macmillan–Colwell.

Brotons, M. (1994). Effects of performing conditions on music performance anxiety and performance quality. *Journal of Music Therapy, 31*(1), 63–81. doi: 10.1093/jmt/31.1.63

Bruner, J. (1961). The act of discovery. *Harvard Educational Review, 31*(1), 21–32.

Bruner, J. (1966). *Toward a theory of instruction.* Cambridge, MA: Harvard University Press.

Bruner, J. (1985). Vygotsky: A historical and conceptual perspective. In J. Wertsch (Ed.), *Culture, communication and cognition: Vygotskian perspectives* (pp. 21–34). Cambridge, United Kingdom: Cambridge University Press.

Bugos, J., & Mazuc, J. (2013). Semantic clustering and processing speed in Suzuki violinists. *Bulletin of the Council for Research in Music Education, 198,* 7–22.

Burland, K. (2005). *Becoming a musician: A longitudinal study investigating the career transitions of undergraduate music students (*Unpublished doctoral dissertation). University of Sheffield, South Yorkshire, United Kingdom.

Burland, K., & Pitts, S. (2007). Becoming a music student: Investigating the skills and attitudes of students beginning a music degree. *Arts and Humanities in Higher Education, 6*(3), 289–308. doi: 10.1177/1474022207080847

Burt, R., & Mills, J. (2006). Taking the plunge: The hopes and fears of students as they begin music college. *British Journal of Music Education, 23*(1), 51–73. doi: 10.1017/S0265051705006741

Burwell, K. (2006). On musicians and singers. An investigation of different approaches taken by vocal and instrumental teachers in higher education. *Music Education Research, 8*(3), 331–347. doi: 10.1080/14613800600957479

Byo, J., & Cassidy, J. (2008). An exploratory study of time use in the practice of music majors: Self-report and observation analysis. *Update: Applications of Research in Music Education, 27*(1), 33–40. doi: 10.1177/8755123308322272

Bytovetski, P. (1917). *Scale technique for the violin.* New York, NY: Carl Fischer, Inc.

Bytovetski, P. (1921). *Double stopping for the violin: How acquired, developed, and mastered from first to intermediate stages.* New York, NY: Carl Fischer, Inc.

Campbell, P. (1991). *Lessons from the world: A cross-cultural guide to music teaching and learning.* New York, NY: Schirmer Books.

Campbell, P. (2010). *Songs in their heads: Music and its meaning in children's lives* (2nd ed.). New York, NY: Oxford University Press.

Canadian Institutes of Health Research, Natural Sciences and Engineering Research Council of Canada, & Social Sciences and Humanities Research Council of Canada. (2010). *Tri-council policy statement: Ethical conduct for research involving humans*. Ottawa, ON: Her Majesty the Queen in Right of Canada. Retrieved from http://www.pre.ethics.gc.ca/eng/policy-politique/initiatives/tcps2-eptc2/Default/

Capet, L. (1916). *La technique superieure de l'archet*. Paris, France: Edition Salabert.

Carpendale, J., & Lewis, C. (2004). Constructing an understanding of mind: The development of children's social understanding within social interaction. *Behavioral and Brain Sciences, 27*(1)*,* 79–151.

Carpendale, J., & Lewis, C. (2006). *How children develop social understanding*. Oxford, United Kingdom: Blackwell.

Carter, C. (2013, October 13). Why the progress in the practice room seems to disappear overnight [Web log post]. Retrieved from http://www.bulletproofmusician.com/why-the-progress-in-the-practice-room-seems-to-disappear-overnight/

Cattell, R. (1973). *Personality and mood by questionnaire*. Oxford, United Kingdom: Jossey-Bass.

Chaffin, R., & Lemieux, A. (2004). General perspectives on achieving musical excellence. In A. Williamon (Ed.), *Musical excellence: Strategies and techniques to enhance performance.* New York, NY: Oxford University Press.

Charmaz, K. (2006). *Constructing grounded theory: A practical guide through qualitative analysis.* Thousand Oaks, CA: Sage.

Chenail, R. (2011). How to conduct clinical qualitative research on the patient's experience. *The Qualitative Report, 16*(4), 1173–1190.

Cheng, E., & Durrant, C. (2007). An investigation into effective string teaching in a variety of learning contexts: A single case study. *British Journal of Music Education, 24*(2), 191–205. doi: 10.1017/S0265051707007413

Cheslock, L. (1931). *An introductory study of violin vibrato.* Baltimore, MD: Peabody Conservatory of Music.

Chesnokova, O. (2004). Agency mediation and an understanding of the mind. *Behavioral and Brain Sciences, 27*(1)*,* 102. doi: http://dx.doi.org/10.1017/S0140525X04280037

Chin, C., & Brown, D. (2000). Learning in science: A comparison of deep and surface approaches. *Journal of Research in Science Teaching, 37*(2), 109–138.

doi: 10.1002/(SICI)1098-2736(200002)37:2<109::AID-TEA3>3.0.CO;2-7

Christensen, B. (2012). *Brandon Christensen.* Retrieved from http://www.christensenviolin.com/

Clapp, S. (2012). *Violin handbook for students of Stephen Clapp.* New York, NY: The Juilliard School.

Clark, D., & Agras, S. (1991). The assessment and treatment of performance anxiety in musicians. *The American Journal of Psychiatry, 148*(5), 598–605.

Cleartune. (2008). [Smartphone Application]. Available from https://itunes.apple.com/ca/app/cleartune-chromatic-tuner/id286799607?mt=8

Collins, A., Brown, J., & Newman, S. (1989). Cognitive apprenticeship: Teaching the crafts of reading, writing, and mathematics. In L. B. Resnick (Ed.), *Knowing, learning, and instruction: Essays in honor of Robert Glaser* (pp. 453–494). Hillsdale, NJ: Lawrence Erlbaum Associates.

Colprit, E. (2000). Observation and analysis of Suzuki string teaching. *Journal of Research in Music Education, 48*(3), 206–221. doi: 10.2307/3345394

Conable, B., & Conable, W. (1995). *How to learn the Alexander Technique: A manual for students* (3rd ed.). Portland, OR: Andover Press.

Conable, B., & Conable, B. (2000). *What every musician needs to know about the body* (2nd ed.). Portland, OR: Andover Press.

Conable, B., & Jordan, J. (2001). *The structures and movement of breathing.* Chicago, IL: GIA Publications.

Cooper, S., & Cardany, A. (2008). Making connections: Promoting music making in the home through a preschool music program. *General Music Today, 22*(1), 4–12. doi: 10.1177/1048371308323329

Corenblum, B., & Marshall, E. (1998). The band played on: Predicting students' intentions to continue studying music. *Journal of Research in Music Education, 46*(1), 128–140. doi: 10.2307/3345765

Covington, M. (1984). The motive for self-worth. In R. Ames & C. Ames (Eds.), *Research on motivation in education: Student motivation.* New York, NY: Academic Press.

Crawford, K. (1996). Vygotskian approaches to human development in the information era. *Educational Studies in Mathematics, 31*(1–2), 43–62.

Creech, A. (2001). *Play for me: An exploration into motivations, issues and outcomes related to parental involvement in their children's violin study* (Unpublished master's thesis). University of Sheffield, South Yorkshire, United Kingdom.

Creech, A., & Hallam, S. (2010). Interpersonal interaction within the violin teaching studio: The influence of interpersonal dynamics on outcomes for teachers. *Psychology of Music, 38*(4), 403–421. doi: 10.1177/0305735609351913

Creswell, J. (2003). *Research design: Qualitative, quantitative, and mixed methods approaches* (2nd ed.). Thousand Oaks, CA: Sage.

Creswell, J. (2008). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (3rd ed.). Upper Saddle River, NJ: Pearson Education.

Creswell, J. (2013). *Qualitative inquiry and research design: Choosing among five approaches* (3rd ed.). Thousand Oaks, CA: Sage.

Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience.* New York, NY: Harper and Row.

Csikszentmihalyi, M. (1998). Fruitless polarities. *Behavioral and Brain Sciences, 21*(3), 411. doi: http://dx.doi.org/10.1017/S0140525X98261231

Csikszentmihalyi, M., & Csikszentmihalyi, I. (Eds.). (1992). *Optimal experience: Psychological studies of flow in consciousness.* Cambridge, United Kingdom: Cambridge University Press.

Cullingford, C. (Ed.). (2006). *Mentoring in education: An international perspective*. Burlington, VT: Ashgate Publishing Company.

Curtis, M. B. (1993). Analysis and comparative review of 'Principles of violin playing and teaching' by Ivan Galamian. *Dissertation Abstracts International: Section A. Education and Music, 57*(12), 5093.

Cutler, A. R. (2003). *Rodolphe Kreutzer's fourty-two studies or caprices for the violin: Detailed analyses according to Ivan Galamian's philosophies of violin playing* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3105739)

Custodero, L. (2005). Observable indicators of flow experience: A developmental perspective on musical engagement in young children from infancy to school age. *Music Education Research, 7*(2), 185–209. doi: 10.1080/14613800500169431

Dai, D., & Schader, R. (2001). Parents' reasons and motivations for supporting their child's music training. *Roeper Review, 24*(1), 23–26. doi: 10.1080/02783190109554121

Daniel, R. (2001). Self-assessment in performance. *British Journal of Music Education, 18*(3), 215–226. doi: http://dx.doi.org/10.1017/S0265051701000316

Davidson, J. (2002). The solo performer's identity. In R. MacDonald, D. Hargreaves, & D. Miell (Eds.), *Musical identities* (pp. 97–113). New York, NY: Oxford University Press.

Davidson, J., Howe, M., & Sloboda, J. (1997). Environmental factors in the development of musical performance skill over the life span. In D. Hargreaves & A. North (Eds.), *The social psychology of music* (pp. 188–206). Oxford, United Kingdom, Oxford University Press.

Davidson, J., Howe, M., Moore, D., & Sloboda, J. (1996). The role of parental influences in the development of musical performance. *British Journal of Developmental Psychology, 14*(4), 399–412. doi: 10.1111/j.2044-835X.1996.tb00714.x

Davidson, J., Howe, M., Moore, D., & Sloboda, J. (1998). The role of teachers in the development of musical ability. *Journal of Research in Music Education, 46*(1), 141–160.

Davis, B., & Sumara, D. (2008). Complexity as a theory of education. *Transnational Curriculum Inquiry, 5*(2), 33–44.

De Alcantara, P. (1997). *Indirect procedures: A musician's guide to the Alexander technique.* New York, NY: Oxford University Press.

Dede, C. (2005). Planning for neomillennial learning styles. *Educause Quarterly, 28*(1), 1–10.

Deleuze, G. (1991). *Empiricism and subjectivity: An essay on Hume's theory of human nature.* New York, NY: Columbia University Press.

Dennett, D. (1985). *Elbow room: The varieties of free will worth wanting.* Cambridge, MA: MIT Press.

Denzin, N. K., & Lincoln, Y. S. (2005a). Epilogue: The eighth and ninth moments – Qualitative research in/and the fractured future. In N. K. Denzin & Y. S. Lincoln (Eds.), *Sage handbook of qualitative research* (3rd ed., pp. 115—1126). Thousand Oaks, CA: Sage.

Denzin, N. K., & Lincoln, Y. S. (2005b). Introduction: The discipline and practice of qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Sage handbook of qualitative research* (3rd ed., pp. 1–33). Thousand Oaks, CA: Sage.

Denzin, N. K., & Lincoln, Y. S. (2011). Introduction: The discipline and practice of qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Sage handbook of qualitative research* (4th ed., pp. 1–21). Thousand Oaks, CA: Sage.

De Vries, P. (2005). Lessons from home: Scaffolding vocal improvisation and song acquisition with a 2-year-old. *Early Childhood Education Journal, 32*(5), 307–312. doi: 10.1007/s10643-004-0962-2

De Vries, P. (2009). Music at home with the under fives: What is happening? *Early Child Development and Care, 179*(4), 395–405. doi: 10.1080/03004430802691914

Dibben, N. (2006). The socio-cultural and learning experiences of music students in a British university. *British Journal of Music Education, 23*(1), 91–116.

doi: http://dx.doi.org/10.1017/S0265051705006765

Doerksen, P., & Delzell, J. (2000). Grade starts and scheduling practices: Recommended vs. actual opportunities in beginning string programs. *American String Teacher, 50*(2), 58–63.

Dont, J. (1968). *24 etudes and caprices for solo violin, op. 35.* New York, NY: International Music Company.

Dounis, D. (1921). *The artist's technique of violin playing.* New York, NY: Carl Fischer, Inc.

Duffy, T., & Jonassen, D. (Eds.). (1992). *Constructivism and the technology of instruction: A conversation.* Hillsdale, NJ: Lawrence Erlbaum.

Duke, R. (1999). Teacher and student behavior in Suzuki string lessons: Results from the International Research Symposium on Talent Education. *Journal of Research in Music Education, 47*(4), 293–307. doi: 10.2307/3345485

Duke, R. (2000). Measures of instructional effectiveness in music research. *Bulletin of the Council for Research in Music Education, 143,* 1–48.

Duke, R. (2012). Their own best teachers: How we help and hinder the development of learners' independence. *Music Educators Journal*, 36–41. doi: 10.1177/0027432112458956

Duke, R., & Chapman, D. (2011). Changing learners: The nature of expertise in music teaching. In P. Ward-Steinman (Ed.), *Collected work: Advances in social-psychology and music education research* (pp. 29–38). Cornwall, United Kingdom: TJ International.

Duke, R., & Henninger, J. (1998). Effects of verbal corrections on student attitude and

performance. *Journal of Research in Music Education, 46*(4), 482–495. doi: 10.2307/3345345

Duke, R., & Henninger, J. (2002). Teachers' verbal corrections and observers' perceptions of teaching and learning. *Journal of Research in Music Education, 50*(1), 75–87. doi: 10.2307/3345694

Duke, R., & Simmons, A. (2006). The nature of expertise: Narrative descriptions of 19 common elements observed in the lessons of three renowned artist-teachers. *Bulletin of the Council for Research in Music Education, 170,* 7–19.

Duke, R., Prickett, C., & Jellison, J. (1998). Empirical description of the pace of music instruction. *Journal of Research in Music Education, 46*(2), 265–280.

Duke, R., Simmons, A., & Cash, C. (2009). It's not how much; it's how: Characteristics of practice behavior and retention of performance skills. *Journal of Research in Music Education, 56*(4)*,* 310–321. doi: 10.1177/0022429408328851

Dunn, R., & Griggs, S. (Eds.). (2000). *Practical approaches to using learning styles in higher education*. Westport, CT: Greenwood Publishing Group.

Dunn, R., Beaudry, J., & Klavas, A. (2002). Survey of research on learning styles. *California Journal of Science Education, 2*(2), 75–98.

Dwyer, S., & Buckle, J. (2009). The space between: On being an insider-outsider in qualitative research. *International Journal of Qualitative Methods, 8*(1), 54–63.

Elliott, D. (1992). Rethinking music teacher education. *Journal of Music Teacher Education, 2*(1), 6–15.

Elliott, D. (2001). Modernity, postmodernity, and music education philosophy. *Research Studies in Music Education, 17*(1)*,* 32–41. doi: 10.1177/1321103X010170010401

Elliott, D. (2002). Philosophical perspectives on research. In R. Colwell & C. Richardson (Eds.), *The new handbook of research on music teaching and learning: A project of the music educators national conference* (pp. 85–103). New York, NY: Oxford University Press.

Ericsson, K. (2008). Deliberate practice and the acquisition of expert performance: An overview. *Academic Emergency Medicine, 15*(11), 988–994. doi: 10.1111/j.1553-2712.2008.00227.x

Ericcson, K., & Kintsch, W. (1995). Long-term working memory. *Psychological Review, 102*(2), 211–245.

Ericsson, K., Krampe, R., & Tesch-Romer, C. (1993). The role of deliberate practice in the acquisition of expert performance. *Psychological Review, 100*(3), 363–406.

Fehm, L., & Schmidt, K. (2006). Performance anxiety in gifted adolescent musicians. *Journal of Anxiety Disorders, 20*(1). 98–109. doi: 10.1016/j.janxdis.2004.11.011

Feldman, D. (1988). Creativity: Dreams, insights, and transformations. In R. Sternberg (Ed.), *The nature of creativity: Contemporary psychological perspectives* (pp. 271–298). New York, NY: Cambridge University Press.

Ferm, C. (2005). Openness and awareness–roles and demands of music teachers. *Music Education Research, 8*(2), 237–250. doi: 10.1080/14613800600779550

Fernyhough, C. (1996). The dialogic mind: A dialogic approach to the higher mental functions. *New Ideas in Psychology, 14*(1)*,* 47–62. doi: 10.1016/0732-118X(95)00024-B

Fernyhough, C. (2004). More than a context for learning? The epistemic triangle and the dialogic mind. *Behavioral and Brain Sciences, 27*(1)*,* 104–105. doi: http://dx.doi.org/10.1017/S0140525X04310034

Fernyhough, C. (2008). Getting Vygotskian about theory of mind: Mediation, dialogue, and the development of social understanding. *Developmental Review, 28*(2)*,* 225–262. doi: 10.1016/j.dr.2007.03.001

Fischer, S. (1997). *Basics: 300 exercises and practice routines for the violin*. London, United Kingdom: Edition Peters.

Fischer, S. (2004). *Practice: 250 step-by-step practice methods for the violin.* London, United Kingdom: Edition Peters.

Flesch, C. (1930). *The art of violin playing: Artistic realization and instruction.* New York, NY: Carl Fischer, Inc.

Flesch, C. (1939). *The art of violin playing: Technique in general, applied technique* (2nd ed.). New York, NY: Carl Fischer, Inc.

Flesch, C. (1942). *Scale system: Scale exercises in all major and minor keys for daily study.* New York, NY: Carl Fischer, Inc.

Flesch, C. (1970). *Basic studies.* New York, NY: Carl Fischer, Inc.

Folkestad, G. (2006). Formal and informal learning situations or practices *vs* formal and informal ways of learning. *British Journal of Music Education, 23*(2), 135–145. doi: http://dx.doi.org/10.1017/S0265051706006887

Fontana, A., & Frey, J. (1994). Interviewing: The art of science. In N. K. Denzin & Y. S. Lincoln (Eds.), *Sage handbook of qualitative research* (3rd ed., pp. 361–376). Thousand Oaks, CA: Sage.

Fredrickson, W. (2007). Perceptions of college-level music performance majors teaching applied music lessons to young students. *International Journal of Music Education, 25*(1)*,* 72–80. doi: 10.1177/0255761407074893

Freiberg, S. (2003). Got tone? Sound advice from the experts on improving your tone production. *Strings,* 113, 55–61.

Frisch, G., & Denig, L. (2007). Violin forum: Chinrest choice based on jaw type. *American String Teacher, 57*(1), 46–52.

Gabrielsson, A. (2003). Music performance research at the millennium. *Psychology of Music, 31*(3), 221–272. doi: 10.1177/03057356030313002

Galamian, I. (1999). *Principles of violin playing and teaching* (3rd ed.). Ann Arbor, MI: Shar Products Company.

Garman, B. (1992). *The effects of accompaniment texture and contextual pitch distance on string instrumentalists' intonational performances* (Unpublished doctoral dissertation). University of Miami, Coral Gables, FL.

Gaunt, H. (2008). One-to-one tuition in a conservatoire: The perceptions of instrumental and vocal teachers. *Psychology of Music, 36*(2), 215–245.

Gaunt, H., & Hallam, S. (2009). Individuality in the learning of musical skills. In S. Hallam, I. Cross, & M. Thaut (Eds.), *Oxford handbook of music psychology.* New York, NY: Oxford University Press.

Gay, L., Mills, G., & Airasian, P. (2009). *Educational research: Competencies for analysis and applications* (9th ed.). Columbus, OH: Pearson.

Gembris, H., & Davidson, J. (2002). Environmental influences. In R. Parncutt & G. McPherson (Eds.), *The science and psychology of music performance: Creative*

strategies for teaching and learning (pp. 17–30). New York, NY: Oxford University Press.

Geringer, J., & Allen, M. (2004). An analysis of vibrato among high school and university violin and cello students. *Journal of Research in Music Education, 52,* 167–178.

Geringer, J., & Witt, A. (1985). An investigation of tuning performance and perception of string instrumentalists. *The Bulletin for the Council of Research in Music Education, 85,* 90–101.

Geringer, J., Allen, M., & MacLeod, R. (2010). String vibrato: Research related to performance and perception. *String Research Journal, 1,* 7–24.

Gholson, S. (1998). Proximal positioning: A strategy of practice in violin pedagogy. *Journal of Research in Music Education, 46*(4), 535–545. doi: 10.2307/3345349

Gibbs, L. (1993). *Private lives: Report on the survey of private music teachers and their professional development and training*. London, United Kingdom: Goldsmiths' College.

Giles, A., & Frego, R. (2004). An inventory of music activities used by elementary classroom teachers: An exploratory study, *Update: Applications of Research in Music Education, 22*(2), 13–22. doi: 10.1177/87551233040220020103

Gillespie, R. (1991). String teachers' diagnostic skills and their students' performance competencies. *Journal of Research in Music Education, 39*(4), 282–289. doi: 10.2307/3345747

Gillespie, R. (1993). Factors for evaluating upper string instrument vibrato and comparison of two instructional approaches. *Dialogue in Instrumental Music Education, 17*(1), 37–51.

Gillespie, R., & Hamann, D. (1998). Status of orchestra programs in the public schools. *Journal of Research in Music Education 46*(1), 75–86. doi: 10.2307/3345761

Gillespie, R., Russell, J., & Hamann, D. (2014). String music educators' perceptions of the impact of new string programs on student outcomes, school music programs, and communities. *Journal of Research in Music Education, 62*(2), 175–187.

Gillham, D. (2010, September 10). David Gillham blog post [Web log post]. Retrieved from http://davidgillham.blogspot.ca/

Gindis, B. (1999). Vygotsky's vision: Reshaping the practice of special education for the 21st century. *Remedial and Special Education, 20*(6), 333–340. doi: 10.1177/074193259902000606

Gipson, R. (1978). *An observational analysis of wind instrument private lessons.* Ann Arbor, MI: UMI Dissertation Publishing.

Gordon, E. (1984). *Learning sequences in music: Skill, content, and patterns.* Chicago, IL: GIA Publications.

Gordon, E. (1987). *The nature, description, measurement, and evaluation of music aptitudes.* Chicago, IL: GIA Publications.

Gredler, M. (2009). Hiding in plain sight: The stages of mastery/self-regulation in Vygotsky's cultural-historical theory. *Educational Psychologist, 44*(1), 1–19. doi: 10.1080/00461520802616259

Gredler, M. (2012). Understanding Vygotsky for the classroom: Is it too late?

Educational Psychology Review, 24(1), 113–131.

Green, E. (1993). *Miraculous teacher: Ivan Galamian and the Meadowmount experience.* Ann Arbor, MI: University of Michigan.

Green, S., & Gredler, M. (2002). A review and analysis of constructivism for school-based practice. *School Psychology Review, 31*(1), 53–70.

Guba, E. G., & Lincoln, Y. S. (1985). *Naturalistic inquiry.* Newbury Park, CA: Sage.

Guba, E. G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (pp. 105–117). Thousand Oaks, CA: Sage.

Guba, E. G., & Lincoln, Y. S. (2005). Paradigmatic controversies, contradictions, and emerging confluences. In N. K. Denzin & Y. S. Lincoln (Eds.), *Sage handbook of qualitative research* (3rd ed., pp. 191–215). Thousand Oaks, CA: Sage.

Gunn, A., Richburg, R., & Smilkstein, R. (2007). *Igniting student potential: Teaching with the brain's natural learning process*. Thousand Oaks, CA: Sage.

Hallam, S. (1997a). Approaches to instrumental music practice of experts and novices: Implications for education. In H. Jorgensen & A. Lehman (Eds.), *Does practice make perfect? Current theory and research on instrumental music practice* (pp. 89–108). Oslo: Norway, Norges Musikkhogskole.

Hallam, S. (1997b). What do we know about practicing? Towards a model synthesising the research literature. In H. Jorgensen & A. Lehman (Eds.), *Does practice make perfect? Current theory and research on instrumental music practice* (pp. 179–231). Oslo, Norway: Norges Musikkhogskole.

Hallam, S. (1998). The predictors of achievement dropout in instrumental tuition. *Psychology of Music, 26*(2), 116–132. doi: 10.1177/0305735698262002

Hallam, S. (2001). The development of metacognition in musicians: Implications for education. *British Journal of Music Education, 18*(1), 27–39. doi: http://dx.doi.org/10.1017/S0265051701000122

Hallam, S. (2002). Musical motivation: Towards a model synthesising the research. *Music Education Research, 4*(2), 225–244. doi: 10.1080/1461380022000011939

Hallam, S. (2006). *Music psychology in education.* London, United Kingdom: Institute of Education, University of London.

Hallam, S. (2010). The power of music: Its impact on the intellectual, social and personal development of children and young people. *International Journal of Music Education, 28*(3), 269–289. doi: 10.1177/0255761410370658

Hallam, S. (2013). What predicts level of expertise attained, quality of performance, and future musical aspirations in young instrumental players? *Psychology of Music, 41*(3), 267–291. doi: 10.1177/0305735611425902

Hallam, S., & Prince, V. (2000). *Research into instrumental music services.* London, United Kingdom: DfEE.

Hallam, S., Rinta, T., Varvarigou, M., Creech, A., Papageorgi, I., Gomes, T., & Lanipekun, J. (2012). The developmnent of practising strategies in young people. *Psychology of Music, 40*(5), 652–680. doi: 10.1177/0305735612443868

Hamann, K. (2000). Teachers, learners, and programs in string education: A review of research. *Journal of String Research, 1*, 1–21.

Hamann, D., & Frost, R. (2000). The effect of private lesson study on the practice habits and attitudes toward practicing of middle school and high school string students. Paper presented at the biennial meeting of the Music Educators National Conference, Washington, DC.

Hamann, D., & Gillespie, R. (2012). *Strategies for teaching strings: Building a successful string and orchestra program.* New York, NY: Oxford University Press.

Hargreaves, D., & North, A. (1999). The functions of music in everyday life: Redefining the social in music psychology. *Psychology of Music, 27*(1)*,* 71–83. doi: 10.1177/0305735699271007

Hargreaves, D., Marshall, N., & North, A. (2003). Music education in the twenty-first century: A psychological perspective. *British Journal of Music Education, 20*(2), 147–163. doi: 10.1017/S0265051703005357

Harrison, J., MacGibbon, L., & Morton, M. (2001). Regimes of trustworthiness in qualitative research: The rigors of reciprocity. *Qualitative Inquiry, 7*(3), 323–345. doi: 10.1177/107780040100700305

Haston, W. (2007). Teacher modeling as an effective teaching strategy. *Music Educators Journal, 93*(4), 26–30.

Hatch, J. (2002). *Doing qualitative research in educational settings.* Albany, NY: State University of New York Press.

Hausfather, S. (1996). Vygotsky and schooling: Creating a social context for learning. *Action in Teacher Education, 18*(2)*,* 1–10. doi: 10.1080/01626620.1996.10462828

Haynes, B. (2007). *The end of early music: A period performer's history of music for the twenty-first century.* Oxford, United Kingdom: Oxford University Press.

Hays, T. (2012). Preparing the next generation of professional musicians. *Australian Kodaly Journal,* 17–26.

Hays, T. (2013). The role of mentorship in the training of professional musicians. *Journal of Arts and Education, 1*(1), 27–37.

Healey, M., & Rawlinson, M. (1993). Interviewing business owners and managers: A review of methods and techniques. *Geoforum, 24*(3)*,* 339–355. doi: 10.1016/0016-7185(93)90026-E

Hellebrandt, F. (1974). Control and regulation of voluntary movement: Application of newer knowledge to violin pedagogy. In P. Rolland (Ed.), *The teaching action of string playing* (pp. 10–29). New York, NY: Alfred Music Publishing.

Henkle, T. (1980). Auer and Flesch: The men and their methods. *Journal of the Violin Society of America, 6*(1), 80–101.

Herfurth, P. (2003). *A tune a day for violin*. Milwaukee, WI: Music Sales America.

Hesterman, P. (2012). Growing as a professional music educator. *General Music Today, 25*(3), 36–41. doi: 10.1177/1048371311435274

Hidi, S. (2000). An interest researcher's perspective: The effects of extrinsic and intrinsic factors on motivation. In C. Sanson & J. Harackiewicz (Eds.), *Intrinsic and extrinsic motivation: The search for optimal motivation and performance* (pp. 309–339). San Diego, CA: Academic Press.

Higgins, K. (2006). The cognitive and appreciative impact of musical universals*. Revue Internationale de Philosophie, 60,* 487–503.

Howe, M., & Sloboda, J. (1991a). Young musicians accounts of significant influences in their early lives. 1. The family and the musical background. *British Journal of*

Music Education, 8(1), 39–52. doi: http://dx.doi.org/10.1017/S0265051700008056

Howe, M., & Sloboda, J. (1991b). Young musicians accounts of significant influences in their early lives. 2. Teachers, practicing, and performing. *British Journal of Music Education, 8*, 53–63. doi: 10.1017/S0265051700008068

Howe, M., Davidson, J., & Sloboda, J. (1998). Innate talents: Reality or myth? *Behavioral and Brain Sciences, 21*(3)*,* 399–442.

Hudson, L., & Ozanne, J. (1988). Alternative ways of seeking knowledge in consumer research. *Journal of Consumer Research, 14*(4), 508–521.

James, W. (1976). *Essays in radical empiricism.* Cambridge, MA: Harvard University Press.

Joachim, J. (1897). *The technique of violin playing.* New York, NY: G. Schirmer, Inc.

Johannsen, A. (1936). The importance of bow technique. *Music Educators Journal, 23*(3), 29–31. doi: 10.2307/3385105

Jones, B., & Parkes, K. (2010). The motivation of undergraduate music students: The impact of identification and talent beliefs on choosing a career in music education. *Journal of Music Teacher Education, 19*(2), 41–56. doi: 10.1177/1057083709351816

Jorgensen, E. (1997). *In search of music education*. Champaign, IL: University of Illinois Press.

Jorgensen, E. (2003). *Transforming music education*. Bloomington, IN: Indiana University Press.

Jorgensen, H. (2000). Student learning in higher instrumental education: Who is responsible? *British Journal of Music Education, 17*(1), 67–77. doi: http://dx.doi.org/

Jorgensen, H. (2001). Instrumental learning: Is an early start a key to success? *British Journal of Music Education, 18*(3), 227–239. doi: http://dx.doi.org/10.1017/S0265051701000328

Juntunen, P. (2011). Music technology promoting violin and string instrument instruction. *CFMAE Interdisciplinary Journal of Music and Art Pedagogy, 3,* 17–34.

Justus, T., & Hustler, J. (2005). Fundamental issues in the evolutionary psychology of music: Assessing innateness and domain-specificity. *Music Perception, 23*(1), 1–27.

Karni, A., Meyer, G., Rey-Hipolito, C., Jezzard, P., Adams, M., Turner, R., & Ungerleider, L. (1998). The acquisition of skilled motor performance: Fast and slow experience-driven changes in primary motor cortex. *Proceedings of the National Academy of Sciences of the United States of America, 95*(3), 861–868.

Karpov. Y. (2003). Development through the lifespan: A neo-Vygotskian approach. In A. Kozulin, B. Gindis, V. Ageyev, & S. Miller (Eds.), *Vygotsky's educational theory in cultural context* (pp. 138–155). New York, NY: Cambridge University Press.

Kelley, L., & Sutton-Smith, B. (1987). A study of infant musical productivity. In J. Peery, I. Peery, & T. Draper (Eds.), *Music and child development* (pp. 35–53). New York, NY: Springer-Verlag.

Kemp, A. (1996). *The musical temperament: Psychology and personality of musicians*. New York, NY: Oxford University Press.

Kemp, A., & Mills, J. (2002). Musical potential. In R. Parncutt & G. McPherson (Eds.), *The science and psychology of music performance: Creative strategies for teaching and learning.* New York, NY: Oxford University Press.

Kempter, S. (2003). *How muscles learn: Teaching the violin with the body in mind.* Miami, FL: Summy-Birchard.

Kennell, R. (1997). Teaching music one-on-one: A case study. *Dialogue in Instrumental Music Education, 27*(1), 69–81.

Kennell, R. (2002). Systematic research in studio instruction in music. In R. Colwell & C. Richardson (Eds.), *The new handbook of research on music teaching and learning* (pp. 243–256). New York, NY: Oxford University Press.

Kenny, D. (2005). A systematic review of treatments for music performance anxiety. *Anxiety, Stress, and Coping, 18*(3), 183–208.

Kenny, D., & Osborne, M. (2006). Music performance anxiety: New insights from young musicians. *Advances in Cognitive Psychology, 2*(2-3), 103–112.

Kingsbury, H. (2010). *Music, talent, and performance: A conservatory cultural system*. Philadelphia, PA: Temple University Press.

Klein, J. T. (2004). Interdisciplinarity and complexity: An evolving relationship. *E: CO, 6*(1–2), 2–10.

Kokotsaki, D., & Hallam, S. (2007). Higher education music students' perceptions of the benefits of participative music making. *Music Education Research, 9*(1), 93–109. doi: 10.1080/14613800601127577

Koopman, C., Smit, N., De Vugt, A., & Deneer, P. (2007). Focus on practice-relationships between lessons on the primary instrument and individual practice in conservatoire education. *Music Education Research, 9*(3), 373–397. doi: 10.1080/14613800701587738

Kovalainen, M., & Kumpulainen, K. (2007). The social construction of participation in an elementary classroom community. *International Journal of Educational Research, 46*(3–4), 141–158. doi: 10.1016/j.ijer.2007.09.011

Krampe, R., & Ericsson, K. (1995). Deliberate practice and elite musical performance. In J. Rink (Ed.), *The practice of performance: Studies in musical interpretation* (pp. 84–102). Cambridge, United Kingdom: Cambridge University Press.

Kreutzer, R. (1963). *42 studies for violin.* New York, NY: International Music Company.

Kupers, E., Van Dijk, M., & Van Geert, P. (2014). "Look closely at what I'm doing!" Scaffolding in individual string lessons: Two case studies. *International Journal of Music Education, 32*(3), 375–391.

Kvale, S., & Brinkmann, S. (2009). *Interviews: Learning the craft of qualitative research interviewing* (2nd ed.). Thousand Oaks, CA: Sage.

Lambert, L. (2002). Introduction. In L. Lambert, D. Walker, D. Zimmerman, J. Cooper, M. Lambert, M. Gardner, M. Szabo (Eds.). *The constructivist leader* (pp. xv–1), New York, NY: Teachers College Press.

Lambert, V., & Lambert, C. (2012). Qualitative descriptive research: An acceptable design. *Pacific Rim International Journal of Nursing Research, 16*(4), 255–256.

Landers, R. (1984). *The Talent Education School of Shinichi Suzuki- an analysis: The application of its philosophy and methods to all areas of instruction*. New York,

NY: Exposition Press.

Lee, H. (2003). *Towards a dynamic pedagogy: Contemporary pedagogical approaches to basic violin techniques.* (Doctoral dissertation). Retrieved from http://trove.nla.gov.au/version/30771123

Lehmann, A., & Ericsson, K. (1997). Research on expert performance and deliberate practice: Implications for the education of amateur musicians and music students. *Psychomusicology: A Journal of Research in Music Cognition, 16*(1-2), 40–58.

Lewis, B. (2010a, October 18). Pasha Sabouri interiews professor Brian Lewis [Video file]. Retrieved from https://www.youtube.com/watch?v=iStf78orimI

Lewis, B. (2010b, December 17). Brian Lewis, part 2 [Video file]. Retrieved from http://www.youtube.com/watch?v=66W7G0j3zCc

Lewis, B. (2013, June 6). Building skills [Video file]. Retrieved from https://www.youtube.com/watch?v=N3DNCHrmEmY

Lewis, B. (2014, March 4). Brian Lewis master class–2014 Menuhin competition [Video file]. Retrieved from http://www.youtube.com/watch?v=JjGAcXGs7eU

L'Hommidieu, R. (1992). *The management of selected educational variables by master studio teachers in music performance* (Unpublished doctoral dissertation). Northwestern University, Evanston, IL.

Lin, C., Chiang, M., Knowlton, B., Iacoboni, M., Udompholkul, P., & Wu, A. (2013). Interleaved practice enhances skill learning and the functional connectivity of fronto-parietal networks. *Human Brain Mapping, 34*(7), 1542–1558. doi: 10.1002/hbm.22009

Lincoln, Y. S., Lynham, S., & Guba, E. (2011). Paradigmatic controversies, contradictions, and emerging confluences, revisited. In N. K. Denzin & Y. S. Lincoln (Eds.), *Sage handbook of qualitative research* (4th ed., pp. 97–129). Thousand Oaks, CA: Sage.

Loehr, J. (1982). *Mental toughness training for sports*. New York, NY: Penguin Books Ltd.

Lotze, M., Schelar, G., Tan, H., Braun, C., & Birbaumer, N. (2003). The musician's brain: Functional imaging of amateurs and professionals during performance and imagery. *NeuroImage, 20*(3)*,* 1817–1829. doi: 10.1016/j.neuroimage.2003.07.018

Lowe, H., & Cook, A. (2003). Mind the gap: Are students prepared for higher education? *Journal of Further and Higher Education, 27*(1), 53–76.

Madsen, K., & Cassidy, J. (2005). The effect of focus of attention and teaching experience on perceptions of teaching effectiveness and student learning. *Journal of Research in Music Education, 53*(3), 222–233. doi: 10.1177/002242940505300304

Madsen, K., & Duke, R. (1985). Observation of teacher/student interactions in music: Observer perceptions versus actual events. *Journal of Research in Music Education, 33,* 205–214.

Manturzewska, M. (1990). A biographical study of the life-span development of professional musicians. *Psychology of Music, 18*(2), 112–139. doi: 10.1177/0305735690182002

Marland, M. (2003). The transition from school to university: Who prepares whom, when, and how? *Arts and Humanities in Higher Education, 2*(2), 201–211. doi: 10.1177/1474022203002002007

Marshall, C., & Rossman, G. B. (1995). *Designing qualitative research*. Newbury Park, CA: Sage.

Martinez, M. (2010). *Learning and cognition: The design of the mind*. Upper Saddle River, NJ: Pearson Education.

Mayan, M. (2009). *Essentials of qualitative inquiry.* Walnut Creek, CA: Left Coast Press, Inc.

McDermott, J., & Hauser, M. (2005). The origins of music: Innateness, uniqueness, and evolution. *Music Perception, 23*(1), 29–59.

McInnis, C., James, R., & McNaught, C. (1995). *First year on campus: Diversity in the initial experiences of Australian undergraduates*. Canberra, Australia: Australian Government Publishing Service.

McPherson, G. (1997). Cognitive strategies and skill acquisition in musical performance. *Bulletin of the Council for Research in Music Education, 133*, 64–71.

McPherson, G. (2000). Commitment and practice: Key ingredients for achievement during the early stages of learning a musical instrument. *Bulletin of the Council for Research in Music Education, 147,* 122–127.

McPherson, G. (2005). From child to musician: Skill development during the beginning stages of learning an instrument. *Psychology of Music, 33*(1), 5–35. doi: 10.1177/0305735605048012

McPherson, G. (2009). The role of parents in children's musical development.

Psychology of Music, 37(1), 91–110. doi: 10.1177/0305735607086049

McPherson, G., & McCormick, J. (2006). Self-efficacy and music performance. *Psychology of Music, 34*(3)*,* 322–336. doi: 10.1177/0305735606064841

McPherson, G., & Renwick, J. (2001). A longitudinal study of self-regulation in children's music practice. *Music Education Research, 3*(2), 169–186. doi: 10.1080/14613800120089232

McPherson, G., & Zimmerman, B. (2002). Self-regulation of musical learning: A social cognitive perspective. In R. Colwell (Ed.), *The new handbook on music teaching and learning* (pp. 327–347). New York, NY: Oxford University Press.

McWilliam, E., & Dawson, S. (2008). Teaching creativity: Towards sustainable and replicable pedagogical practice. *Higher Education, 56*(6), 633–643.

Merriam, S. (1991). How research produces knowledge. In J. M. Peters & P. Jarvis (Eds.), *Adult education.* San Francisco, CA: Jossey-Bass.

Merriam, S. (2001). *Qualitative research and case study applications in education* (2nd ed.). San Francisco, CA: Jossey-Bass.

Metcalfe, J., & Shimamura, A. (1994). *Metacognition: Knowing about knowing*. Cambridge, MA: MIT Press.

Mezirow, J. (1990). *Fostering critical reflection in adulthood: A guide to transformative and emancipatory learning*. San Francisco, CA: Jossey-Bass.

Mikecz, R. (2012). Interviewing elites: Addressing methodological issues. *Qualitative Inquiry, 18*(6), 482–493. doi: 10.1177/1077800412442818

Mills, J. (2002). Conservatoire students' perceptions of the characteristics of effective

instrumental and vocal tuition. *Bulletin of the Council for Research in Music Education, 153/154,* 78–82.

Mills, J., & Smith, J. (2003). Teachers' beliefs about effective instrumental teaching in schools and higher education. *British Journal of Music Education, 20*(1), 5–27. doi: 10.1017/S0265051702005260

Mishler, E. (1986). *Research interviewing.* Cambridge, MA: Harvard University Press.

Mishler, E. (1999). *Storylines: Craftartists' narratives of identity.* Cambridge, MA: Harvard University Press.

Mishra, J. (2000). Q & A: Research related to the teaching of string technique. *Journal of String Research, 1,* 9–36.

Nerland, M. (2007). One-to-one teaching as cultural practice: Two case studies from an academy of music. *Music Education Research, 9*(3), 399–416.

Neumann, F. (1969). *Violin left hand technique: A survey of related literature.* Urbana, IL: American String Teachers Association.

Nielsen, S. (2001). Self-regulating learning strategies in instrumental music practice. *Music Education Research, 3*(2), 155–167. doi**:** 10.1080/14613800120089223

Niles, L. (2010, July 20). Inventive teaching [Web log post]. Retrieved from http://www.violinist.com/blog/laurie/20107/11473/

North, A., & Hargreaves, D. (2007). Lifestyle correlates of musical preference: Relationships, living arrangements, beliefs, and crime. *Psychology of Music, 35*(1)*,* 58–87. doi: 10.1177/0305735607068888

North, A., Hargreaves, D., & O'Neill, S. (2000). The importance of music to adolescents. *British Journal of Educational Psychology, 70,* 255–272. doi: 10.1348/000709900158083

Norton, H. (1901). *The art of string quartet playing.* New York, NY: Simon & Schuster.

Nunkoosing, K. (2005). The problems with interviews. *Qualitative Health Research, 15*(5)*,* 698–706. doi: 10.1177/1049732304273903

Olsson, B. (1997). The social psychology of music education. In D. Hargreaves & A. North (Eds.), *The social psychology of music* (pp. 290–305). Oxford, United Kingdom: Oxford University Press.

O'Neill, S. (1997). The role of practice in children's early musical performance achievement. In H. Jorgensen & A. Lehmann (Eds.), *Does practice make perfect? Current theory and research on instrumental music performance* (pp. 53–70). Oslo, Norway: Norwegian State Academy of Music.

O'Neill, S. (1999). The role of motivation in the practice and achievement of young musicians. In S. Yi (Ed.), *Music, mind, and science* (pp. 420–433). Seoul, South Korea: Seoul National University Press.

O'Neill, S. (2002). The self-identity of young musicians. In R. MacDonald, D. Hargreaves, & D. Miell (Eds.), *Musical identities* (pp. 79–96). New York, NY: Oxford University Press.

O'Neill, S., & McPherson, G. (2002). Motivation. In R. Parncutt & G. McPherson (Eds.), *The science and psychology of music performance: Creative strategies for teaching and learning.* New York, NY: Oxford University Press.

Ontario Ministry of Education (2012). *Ontario regulation made under the Education Act hiring processes.* Queen's Printer for Ontario. Retrieved from http://www.edu.gov.on.ca/eng/OReg274.pdf

Opdenakker, R. (2006). Advantages and disadvantages of four interview techniques in qualitative research. *Forum: Qualitative Social Research, 7*(4). Retrieved from http://www.qualitative-research.net/index.php/fqs/article/view/175/391%3E

Ortlipp, M. (2008). Keeping and using reflective journals in the qualitative research process. *The Qualitative Report, 13*(4), 695–705.

Osborne, M., & Franklin, J. (2002). Cognitive processes in music performance anxiety. *Australian Journal of Psychology, 54*(2), 86–93. doi: 10.1080/00049530210001706543

Paganini, N. (1977). *24 caprices, op. 1 for violin solo, edited by Tadeusz Wronski.* Krakow, Poland: Wydawnictwo Muzyczne.

Pajares, F. (1996). Self-efficacy in academic settings. *Review of Educational Research, 66*(4), 543–578. doi: 10.3102/00346543066004543

Pajares, F., & Schunk, D. (2001). The development of academic self-efficacy. In A. Wigfield & J. Eccles (Eds.), *Development of achievement motivation* (pp. 1–27). San Diego, CA: Academic Press.

Palincsar, A. (1998). Social constructivist perspectives on teaching and learning. *Annual Review of Psychology, 49*(1)*,* 345–375. doi: 10.1146/annurev.psych.49.1.345

Palmer, C. (1997). Music performance. *Annual Review of Psychology, 48*, 115–138.

Papageorgi, I., Hallam, S., & Welch, G. (2007). A conceptual framework for understanding music performance anxiety. *Research Studies in Music Education,*

28(1), 83–107. doi: 10.1177/1321103X070280010207

Parker, J., Summerfeldt, L., Hogan, M., & Majeski, S. (2004). Emotional intelligence and academic success: Examining the transition from high school to university. *Personality and Individual Differences, 36*(1), 163–172. doi: 10.1016/S0191-8869(03)00076-X

Parkes, K., & Jones, B. (2011). Students' motivations for considering a career in music performance. *Update: Applications of Research in Music Education, 29*(2), 20–28. doi: 10.1177/8755123310397005

Parkes, K., & Jones, B. (2012). Motivational constructs influencing undergraduate students' choices to become classroom music teachers or music performers. *Journal of Research in Music Education, 60*(1), 101–123. doi: 10.1177/0022429411435512

Pascarella, E., & Terenzini, P. (2005). *How college affects students: A third decade of research.* San Francisco, CA: Jossey-Bass.

Patston, T. (2014). Teaching stage fright? – Implications for music educators. *British Journal of Music Education*, *31*(1), 85–98. doi: http://dx.doi.org/10.1017/S0265051713000144

Pea, R. (2004). The social and technological dimensions of scaffolding and related theoretical concepts for learning, education, and human activity. *Journal of the Learning Sciences, 13*(3), 423–451.

Penner, R. (2001). Mentoring in higher education. *Direction 30*(1), 45–52.

Perkins, M. (1995). *A comparison of violin playing techniques: Kató Havas, Paul Rolland, and Shinichi Suzuki.* Fairfax, VA: American String Teachers Association.

Persson, R. (2000). Survival of the fittest or the most talented? Deconstructing the myth of the musical maestro. *Journal of Advanced Academics, 12*(1), 25–38. doi: 10.4219/jsge-2000-638

Pitts, S. (2002). Changing tunes: Musical experience and self-perception amongst school and university music students. *Musicae Scientiae, 6*(1), 73–92. doi: 10.1177/102986490200600104

Pitts, S. (2003). What do students learn when we teach music? An investigation of the "hidden"curriculum in a university music department. *Arts and Humanities in Higher Education, 2*(3), 281–292.

Pitts, S. (2009). Roots and routes in adult musical participation: Investigating the impact of home and school on lifelong musical interest and involvement. *British Journal of Music Education, 26*(3), 241–256. doi: 10.1017/S0265051709990088

Pitts, S., & Davidson, J., & McPherson, G. (2000). Developing effective practice strategies: Case studies of three young instrumentalists. *Music Education Research, 2*(1), 45–56. doi: 10.1080/14613800050004422

Polnauer, F. (1952). Biomechanics: A new approach to music education. *Journal of the Franklin Institute, 254*(4), 297–316. doi: 10.1016/0016-0032(52)90902-2

Portner, H. (Ed.). (2005). *Teacher mentoring and induction: The state of the art and beyond.* Thousand Oaks, CA: Sage.

Powell, D. (2004). Treating individuals with debilitating performance anxiety: An introduction. *Journal of Clinical Psychology, 60*(8), 801–808. doi: 10.1002/jclp.20038

Powell, K. (2006). *Educational psychology of the self: An interactive workbook*. Dubuque, IA: Kendall/Hunt Publishing.

Powell, K., & Kalina, C. (2009). Cognitive and social constructivism: Developing tools for an effective classroom. *Education, 130*(2), 241–250.

Presland, C. (2005). Conservatoire student and instrumental professor: The student perspective on a complex relationship. *British Journal of Music Education, 22*(3), 237–248. doi: http://dx.doi.org/10.1017/S0265051705006558

Pritchard, A. (2014). *Ways of learning: Learning theories and learning styles in the classroom* (3rd ed.). New York, NY: Routledge.

Przygocki, J. (2009). Addressing the string teacher shortage around the country. *American String Teacher,* 32–35.

Purcell, S. (2005). Teacher research in a conservatoire. In G. Odam & N. Bannan (Eds.), *The reflective conservatoire: Studies in music education* (pp. 225–248). Burlington, VT: Ashgate Publishing Company.

Quinton, A., & Quinton, B. (2015). Empiricism: Philosophy. *Encyclopedia Britannica*. Available from: http://www.britannica.com/EBchecked/topic/186146/empiricism

Reid, A. (2001). Variation in the ways that instrumental and vocal students experience learning music. *Music Education Research, 3*(1), 25–40. doi: 10.1080/14613800020029932

Reimer, B. (1989). *A philosophy of music education* (2nd ed.). Englewood Cliffs, NJ: Prentice Hall.

Reimer, B. (1997). Music education in the twenty-first century. *Music Educators Journal, 84*(3), 33–38.

Renwick, J., & McPherson, G. (2002). Interest and choice: Student-selected repertoire and its effect on practising behaviour. *British Journal of Music Education, 19*(2), 173–188. doi: http://dx.doi.org/10.1017/S0265051702000256

Ricci, R. (1988). *Left hand violin technique.* New York, NY: G. Schirmer, Inc.

Rink, J. (2004). The state of play in performance studies. In J. Davidson (Ed.), *The music practitioner: Research for the music performer, teacher and listener* (pp. 37–52). Burlington, VT: Ashgate Publishing Company.

Rodrigues, R. (2009). *Selected students of Leopold Auer – A study in violin performance practice* (Unpublished doctoral dissertation). The University of Birmingham, Birmingham, AL.

Rogoff, B. (1990). *Apprenticeship in thinking: Cognitive development in social context.* New York, NY: Oxford University Press.

Rolland, P. (Producer). (1974a). *Illinois string project* [Film]. Urbana, IL: Illinois String Research Associates.

Rolland, P. (1974b). *The teaching of action in violin playing.* New York: NY: Alfred Music Publishing.

Rosenthal, R. (1984). The relative effects of guided model, model only, guide only, and practice only treatments on the accuracy of advanced instrumentalists' musical performance. *Journal of Research in Music Education, 32*(4), 265–273.

doi: 10.2307/3344924

Rossman, G., & Rallis, S. (2012). *Learning in the field: An introduction to qualitative research* (3rd ed.). Thousand Oaks, CA: Sage.

Rostvall, A., & West, T. (2003). Analysis of interaction and learning in instrumental teaching. *Music Education Research, 5*(3), 213–226. doi: 10.1080/1461380032000126319

Rowan. J. (1981). A dialectical paradigm for research. In P. Reason & J. Rowan (Eds.), *Human inquiry* (pp. 93–112). New York, NY: Wiley.

Sabo-Skelton, L. (1998). Intuition and absorption. *Strad, 109*(1303), 1226–1229.

Salmon, P. (1990). A psychological perspective on music performance anxiety: A review of the literature. *Medical Problems of Performing Artists, 5*(1), 2–11.

Salzberg, R. (1980). The effects of visual stimulus and instruction on intonation accuracy of string instrumentalists. *Psychology of Music, 8*(2), 42–49.

Salzberg, C., & Salzberg, R. (1981). Praise and corrective feedback in the remediation of incorrect left hand positions of elementary string players. *Journal of Research in Music Education, 29*(2), 125–133. doi: 10.2307/3345021

Sand, B. (2000). *Teaching genius: Dorothy DeLay and the making of a musician*. Portland, OR: Amadeus Press.

Sandelowski, M. (2000). Whatever happened to qualitative description? *Research in Nursing and Health, 23,* 334–340.

Savage, H., Karp, R., & Logue, R. (2004). Faculty mentorship at college and universities. *College Teaching, 52*(1), 21–24.

Schradieck, H. (1928). *The school of violin techniques.* New York, NY: G. Schirmer, Inc.

Scott, L. (1992). Attention and perseverance behaviors of preschool children enrolled in Suzuki violin lessons and other activities. *Journal of Research in Music Education, 40*(3), 225–235. doi: 10.2307/3345684

Scott, S. (2008). Integrating inquiry-based (constructivist) music education with Kodaly-inspired learning. *Kodaly Envoy, 35*(1), 4–9.

Scott, S. (2011). Contemplating a constructivist stance for active learning within music education *Arts Education Policy Review, 112*(4)*,* 191–198. doi: 10.1080/10632913.2011.592469

Seashore, C. (Ed.) (1932). *The vibrato*. Iowa City, IA: The University of Iowa.

Seidman, I. (2005). *Interviewing as qualitative research: A guide for researchers in education and the social sciences.* New York, NY: Teachers College Press.

Sellars, W. (1956). Empiricism and philosophy of mind. *Minnesota Studies in the Philosophy of Science, 1*(19), 253–329.

Sevcik, O. (1905). *School of violin technique, Op. 1.* New York, NY: G. Schirmer, Inc.

Sevcik, O. (2010). *Shifting the position and preparatory scale studies, op. 8: Violin method*. New York, NY: G. Schirmer, Inc.

Shenton, A., & Hayter, S. (2004). Strategies for gaining access to organisations and informants in qualitative studies. *Education for Information, 22*(3–4)*,* 223–231.

Simons, H. (2009). *Case study research in practice.* Thousand Oaks, CA: Sage.

Sitt, H. (1907). *Studies for violin, part 2: Twenty studies in the 2nd, 3rd, 4th, and 5th positions.* New York, NY: G. Schirmer, Inc.

Sloboda, J., & Davidson, J. (1996). The young performing musician. In I. Deliege & J. Sloboda (Eds.), *Musical beginnings: Origins and development of musical competence*. Oxford, United Kingdom: Oxford University Press.

Sloboda, J., & Howe, M. (1991). Biographical precursors of musical excellence: An interview study. *Psychology of Music, 19*(1), 3–21. doi: 10.1177/0305735691191001

Smith, B. (2005). Goal orientation, implicit theory of ability, and collegiate instrumental music practice. *Psychology of Music, 33*(1)*,* 36–57. doi: 10.1177/0305735605048013

Smith, C. (1997). Access to string instruction in American public schools. *Journal of Research in Music Education, 45*(4), 650–662. doi: 10.2307/3345429

Smith, C. (2000). String programs in low socioeconomic level school districts. *Journal of String Research, 1,* 97–115.

Smith, K. (2002). School to university: Sunlit steps, or stumbling in the dark? *Arts and Humanities in Higher Education, 2*(1), 90–98. doi: 10.1177/1474022203002001008

Soccio, A. (2013). The relation of culture and musical play. *Applications of Research in Music Education, 32*(1), 52–58. doi: 10.1177/8755123313502340

Sogin, D. (1997). An exploratory study on contingent verbal feedback for accuracy of intonation in musical performance. *Perceptual and Motor Skill, 84*(1), 217–218.

Songca, R. (2006). Transdisciplinarity: The dawn of an emerging approach to acquiring knowledge. *International Journal of African Renaissance Studies, 1*(2), 221–232. doi: 10.1080/18186870608529718

Sosniak, L. (1990). The tortoise, the hare, and the development of talent. In M. Howe (Ed.), *Encouraging the development of exceptional skills and talents* (pp. 149–164). Leicester, United Kingdom: The British Psychological Society.

Spohr, L. (1832). *Violinschule.* Vienna, Austria: Wien, T. Haslinger.

Stake, R. (2005). Qualitative case studies. In N. K. Denzin & Y. S. Lincoln (Eds.), *Sage handbook of qualitative research* (3rd ed., pp. 443–466). Thousand Oaks, CA: Sage.

Stambaugh, L. (2011). When repetition isn't the best practice strategy: Effects of blocked and random practice schedules. *Journal of Research in Music Education, 58*(4), 368–383. doi: 10.1177/0022429410385945

Steptoe, A. (2001). Negative emotions in music making: The problem of performance anxiety. In P. Julsin & J. Sloboda (Eds.), *Music and emotion: Theory and research. Series in affective science* (pp. 291–307). New York: NY, Oxford University Press.

Steptoe, A., & Fidler, H. (1987). Stage fright in orchestral musicians: A study of cognitive and behavioural strategies in performance anxiety. *British Journal of Psychology, 78*(2), 241–249. doi: 10.1111/j.2044-8295.1987.tb02243.x

Stevens, C., & Byron, T. (2009). Universals in music processing. In S. Hallam, I. Cross, & M. Thaut (Eds.), *The Oxford handbook of music psychology* (pp. 14–23). Oxford, United Kingdom: Oxford University Press.

Stewart, L., & Williamon, A. (2008). What are the implications of neuroscience for music education? *Educational Research, 50*(2), 177–186. doi: 10.1080/00131880802082666

Stipek, D. (2002). *Motivation to learn: Integrating theory and practice* (4th ed.). Boston, MA: Allyn and Bacon.

Stowell, R. (1985). *Violin technique and performance practice in the late eighteenth and nineteenth centuries*. Cambridge, United Kingdom: Cambridge University Press.

Stowell, R. (2007). In principle violin pedagogy through the ages 2: Louis Spohr's Violinschule. *Strad, 118*(1410), 58.

Subotnik, R., Olszewski-Kubilius, P., & Worrell, F. (2011). Rethinking giftedness and gifted education: A proposed direction forward based on psychological science. *Psychological Science in the Public Interest, 12*(1), 3–54. doi: 10.1177/1529100611418056

Suzuki, S. (1983*). Nurtured by love.* Miami, FL: Summy-Birchard.

Suzuki, S. (1986). *Man and talent*. Detroit, MI: SJournal Articles.

Suzuki, S. (1989). Discovery of the law of ability and the principle of ability development. In *Shinichi Suzuki: His speeches and essays* (pp. 1–18). Miami, FL: Summy-Birchard.

Suzuki, S. (1995). *Suzuki violin school, volume 1: Violin part.* Miami, FL: Summy-Birchard.

Suzuki, S. (1996). *Young children's talent education and its method*. Miami, FL: Summy-Birchard.

Swanborn, P. (2010). *Case study research: What, why and how?* Thousand Oaks, CA: Sage.

Tarr, J. (2010). Educating with the hands: Working on the body/self in Alexander Technique. *Sociology of Health and Illness,* 1–14. doi: 10.1111/j.1467-9566.2010.01283.x

Tempo SloMo–BPM Music Practice Slow Downer. (2015). [Smartphone Application]. Available from https://itunes.apple.com/ca/app/tempo-slowmo-bpm-music-practice/id460008289?mt=8

The Amazing Slowdowner. (2015). [Smartphone Application]. Available from https://itunes.apple.com/ca/app/amazing-slow-downer/id308998718?mt=8

Thomas, G. (2011). *How to do your case study: A guide for students and researchers.* Thousand Oaks, CA: Sage.

Triantafyllaki, A. (2005). A call for more instrumental music teaching research. *Music Education Research, 7*(3)*,* 383–387. doi: 10.1080/14613800500280535

Trott, J. (2007). *Melodious doublestops, complete books 2 and 2 for the violin.* New York, NY: G. Schirmer, Inc.

Tudge, J., & Rogoff, B. (1999). Peer influences on cognitive development: Piagetian and Vygotskian perspectives. In P. Lloyd & C. Fernyhough (Eds.), *Lev Vygotsky: Critical assessments* (pp. 32–56). New York, NY: Routledge.

Tudge, J., & Winterhoff, P. (1993). Vygotsky, Piaget, and Bandura: Perspectives on the relations between the social world and cognitive development. *Human Development, 36,* 61–81.

Tursi, F. (1955). Excessive tension in string performance. *American String Teacher, 5*(3), 6.

Upcraft, M., Gardner, J., & Barefoot, B. (2005). *Challenging and supporting the first-year student: A handbook for improving the first year of college*. San Francisco, CA: Jossey-Bass.

Valentine, E. (2002). The fear of performance. In J. Rink (Ed.), *Musical performance: A guide to understanding* (pp. 168–182). Cambridge, United Kingdom: Cambridge University Press.

Valentine, E., Fitzgerald, D., Gorton, T., Hudson, J., & Symonds, E. (1995). The effect of lessons in the Alexander Technique on music performance in high and low stress situations. *Psychology of Music, 23*(2), 129–141. doi: 10.1177/0305735695232002

Vamos, R. (2012). *Exercises for the violin in various combinations of double-stops.* New York, NY: Carl Fischer, Inc.

Van der Meer, J., Jansen, E., & Torenbeek, M. (2010). "It's almost a mindset that teachers need to change": First-year students' need to be inducted into time management. *Studies in Higher Education, 35*(7), 777–791. doi: 10.1080/03075070903383211

Vygotsky, L. (1978). *Mind in Society*. Cambridge, MA: Harvard University Press.

Vygotsky, L. (1984). *Collected works: Child psychology*. Moscow, Russia: Pedagogika.

Vygotsky, L. (1987). *The collected works of L. S. Vygotsky: Problems of general psychology*. New York, NY: Plenum.

Vygotsky, L. (1994). The development of academic concepts in school-aged children. In R. Van Der Veer, & J. Valsiner (Eds.), *The Vygotsky reader* (pp. 355–370). Cambridge, United Kingdom: Blackwell.

Vygotsky, L. (1997). Genesis of higher mental functions. In R. Rieber (Ed.), *Collected works of L. S. Vygotsky: Vol. 4. The history of the development of higher mental functions* (pp. 97–119). New York, NY: Plenum.

Walls, P. (2002). Historical performance and the modern performer. In J. Rink (Ed.), *Musical performance: A guide to understanding* (pp. 17–34). New York, NY: Cambridge University Press.

Watson, A. (2006). What can studying musicians tell us about motor control of the hand? *Journal of Anatomy, 208*(4), 527–542. doi: 10.1111/j.1469-7580.2006.00545.x

Weiner, B. (1974). *Achievement motivation and attribution theory*. Morristown, NJ: General Learning Press.

Weiner, B. (1976). An attributional approach for educational psychology. *Review of Research in Education, 4*(1), 179–209. doi: 10.3102/0091732x004001179

Weiner, B. (1985). An attributional theory of achievement motivation and emotion. *Psychological Review, 92*(4), 548–573.

Weiner, B. (2006). *Social motivation, justice, and the moral emotions: An attributional approach*. Mahwah, NJ: Lawrence Erlbaum Associates.

Wertsch, J., & Sohmer, R. (1995). Vygotsky on learning and development. *Human Development, 38,* 332–337. doi: 10.1159/000278339

Whistler, H. (1989a). *Introducing the positions for violin: Volume 1 – third and fifth position.* Chicago, IL: Rubank Publications.

Whistler, H. (1989b). *Introducing the positions for violin: Volume 2 – second, fourth, sixth, and seventh position.* Chicago, IL: Rubank Publications.

Whitaker, N. L. (1996). Elusive connections: Music integration and the elementary

classroom. *Bulletin of the Council for Research in Music Education, 130,* 89–99.

Wiggins, J. (2007). Authentic practice and process in music teacher education. *Music Educators Journal, 93*(3), 36–42.

Williamon, A. (2004). A guide to enhancing musical performance. In A. Williamon (Ed.), *Musical excellence: Strategies and techniques to enhance performance*. New York, NY: Oxford University Press.

Williamon, A., & Valentine, E. (2000). Quantity and quality of musical practice as predicators of performance quality. *British Journal of Psychology, 91*(3), 353–376. doi: 10.1348/000712600161871

Wilson, G. (2002). *Psychology for performing artists: Butterflies and bouquets* (2nd ed.). London, United Kingdom: Whurr.

Wilson, G., & Roland, D. (2002). Performance anxiety. In R. Parncutt & G. McPherson (Eds.), *The science and psychology of music performance: Creative strategies for teaching and learning* (pp. 47–61). New York, NY: Oxford University Press.

Winberg, J., & Salus, M. (1990). *Stretching for strings*. Fairfax, VA: American String Teachers Association.

Winterton, J., & Russ, M. (2009). Understanding the transition from school to university in music and music technology. *Arts and Humanities in Higher Education, 8*(3), 339–354. doi: 10.1177/1474022209339962

Wohlfahrt, F. (1905). *Sixty studies for the violin, op. 45.* New York, NY: G. Schirmer, Inc.

Wolcott, W. (2009, June 17). Ipod touch/iphone…wow…I'm endorsing Music Trainer! [Web log post]. Retrieved from http://www.violinist.com/blog/wwolcott/20096/10240/

Wolcott, W. (2012). *Wolcott violin studio.* Retrieved from http://www.wolcottviolin.com/music/

Wood, D., & Middleton, D. (1975). A study of assisted problem solving. *British Journal of Psychology, 66*(2)*,* 181–191. doi: 10.1111/j.2044-8295.1975.tb01454.x

Wood, D., Bruner, J., & Ross, G. (1976). The role of tutoring in problem solving. *Journal of Child Psychology and Psychiatry, 17*(2)*,* 89–100. doi: 10.1111/j.1469-7610.1976.tb00381.x

Woodside, A. (2010). *Case study research: Theory, methods, practice*. Bingley, United Kingdom: Emerald Group Publishing.

Woolfolk, A. (2004). *Educational psychology*. Boston, MA: Pearson.

Wrigley, W., & Emmerson, S. (2013). The experience of the flow state in live music performance. *Psychology of Music, 41*(3), 292–305. doi: 10.1177/0305735611425903

Yin, R. (2004). *The case study anthology.* Thousand Oaks, CA: Sage.

Yin, R. (2009). *Case study research: Design and methods* (4th ed.). Thousand Oaks, CA: Sage.

Yost, G. (1928). *The Yost system for violin: Exercises for the change of position.* Pittsburgh, PA: Volkwein Bros., Inc.

Young, V., Burwell, K., & Pickup, Y. (2003). Areas of study and teaching strategies in

instrumental teaching: A case study. *Music Education Research, 5*(2), 139–155. doi: 10.1080/1461380032000085522

Ysaÿe, E. (1967). *Exercises and scales: Daily practice.* Brussels, Belgium: Editions Ysaÿe.

Zdzinski, S. (1996). Parental involvement, selected student attributes, and learning outcomes in instrumental music. *Journal of Research in Music Education, 44*(1), 34–48. doi: 10.2307/3345412

Zhukov, K. (2007). Student learning styles in advanced instrumental music lessons. *Music Education Research, 9*(1), 111–127. doi: 10.1080/14613800601127585

Zweig, M. (2008). *Mimi Zweig StringPedagogy.* [DVD]. Available from http://www.stringpedagogy.com

Zweig, M. (2011). Paul Rolland and his influence. *American String Teacher, 61*(2), 20–22.

APPENDIX A

Demographic Information and Pedagogical Lineage of Participants

Participant	Institution	Instructors and Lineages
Stephen Clapp	The Juilliard School New York, NY, United States	Dorothy DeLay – studied with Ivan Galamian and Raymond Cerf Ivan Galamian – studied with Konstantin Mostras (Leopold Auer – Joseph Joachim – links to Johannes Brahms, Ferdinand David, Louis Spohr, and Antonio Corelli) and Lucien Capet Andor Toth – studied with Ivan Galamian and Hans Letz (Joseph Joachim)
Dr. Kurt Gilman	Lamar University Beaumont, TX, United States	Zvi Zeitlin – studied with Sascha Jacobsen, Louis Persinger, and Ivan Galamian (lineage has links to Joseph Joachim and Johannes Brahms) Dorothy DeLay – studied with Ivan Galamian
Gisèle Dalbec-Szczesniak	Queens University Montreal, Quebec, Canada	Lorand Fenyves – studied with Jeno Hubay (Joseph Joachim) and Zoltan Kodaly (Bela Bartok) Syoko Aki – studied with Broadus Erle (Alexander Bloch – Leopold Auer)
Dr. Wanchi Huang	James Madison University Harrisonburg, VA, United States	Daniel Heifetz – studied with Ivan Galamian Shirley Givens – studied

		with Ivan Galamian Jascha Brodsky – studied with Ivan Galamian Jaime Laredo – studied with Ivan Galamian
Dr. Nancy Bargerstock	Appalachian State University Boone, NC, United States	Ann Rylands – studied with Ivan Galamian Ivan Galamian Jascha Brodsky – studied with Eugene Ysaye and Lucien Capet
Dr. Brandon Christensen	Southeast Missouri State University Cape Girardeau, MO, United States	Oswald Lehnert – studied with Ivan Galamian Elaine Richey – studied with Ivan Galamian Mitchell Stern – studied with Ivan Galamian
Emlyn Ngai	University of Hartford West Hartford, CT, United States	Sydney Humphries – studied with Frederick Grinke (Carl Flesch – Martin Marsick and George Enesco) Tom Williams – Francis Chaplin (Ivan Galamian and Louis Persinger) Marilyn McDonald – studied with Angel Reyes and Josef Gingold (Eugene Ysaye)
William Wolcott	University of Nebraska Omaha, NE, United States	Wilfred Biel – studied with Ivan Galamian Eugene Fodor – studied with Ivan Galamian

David Gillham	University of British Columbia Vancouver, British Columbia, Canada	Moshe Hammer – studied with Ivan Galamian and Jascha Heifetz (Leopold Auer) David Zafer – studied with Elie Spivak (Adolf Brodsky) and Albert Pratz (Luigi von Kunits – Otakar Sevcik) Martin Beaver – studied with Josef Gingold (Eugene Ysaye), Victor Danchenko (David Oistrakh), and Henryk Szeryng (Carl Flesch) Gwen Hoebig – studied with Steven Staryk (Oscar Shumsky), Sydney Humphries, and Ivan Galamian
Brian Lewis	University of Texas Austin, TX, United States	Dorothy DeLay – studied with Ivan Galamian Shinichi Suzuki – studied with Karl Klingler (Joseph Joachim)

APPENDIX B

Recruitment of Participants/Email Correspondence

Email to Dean/Head of Music Department

To: Dean/Head of Music Department

My name is Vanessa Mio, and I am currently a PhD student at the University of Windsor. At present, I am in the process of recruiting potential participants for my doctoral research study, entitled *Foundational Learning and Rehabilitation: An Investigation of the Rehabilitative Strategies of Postsecondary Violin Instructors.* The study will investigate postsecondary violin instructors' experiences with corrective pedagogy, and their strategies (e.g., pedagogical, emotional, physiological) in implementing corrective pedagogy with first-year violin performance students. Through a random sample, I am interested in locating tenure-track violin instructors who have at least ten years of postsecondary teaching experience. Could you kindly reply with names of potential participants at your institution who meet this specific criteria?

Thank you so much.

Sincerely,
Vanessa Mio

Email to Potential Participants

My name is Vanessa Mio, and I am currently a PhD student at the University of Windsor. At present, I am in the process of recruiting potential participants for my doctoral research study, entitled *Foundational Learning and Rehabilitation: An Investigation of the Rehabilitative Strategies of Postsecondary Violin Instructors.* The study will investigate postsecondary violin instructors' experiences with corrective pedagogy, and their strategies (e.g., pedagogical, emotional, physiological) in implementing corrective pedagogy with first-year violin performance students. Following a random selection, I personally accessed your email address from your institutional website. If you are interested in being a part of this study, please email me back at your convenience, and I will send you further information regarding the study.

Thank you so much!

Sincerely,
Vanessa Mio

Modified Email to Potential Participants

My name is Vanessa Mio, and I am currently a PhD student at the University of Windsor. At present, I am in the process of recruiting potential participants for my doctoral research study, entitled *Foundational Learning and Rehabilitation: An Investigation of the Rehabilitative Strategies of Postsecondary Violin Instructors.* The study will investigate postsecondary violin instructors' experiences with corrective pedagogy, and their strategies (e.g., pedagogical, emotional, physiological) in implementing corrective pedagogy with first-year violin performance students. I am interested in locating violin instructors who have at least ten years of postsecondary teaching experience. Following a random selection, I personally accessed your email address from your institutional website. If you are interested in being a part of this study, please email me back at your convenience, and I will send you further information regarding the study.

Thank you so much!

Sincerely,
Vanessa Mio

Email to Participants who Expressed an Interest in the Study

Thank you so much for expressing an interest in my study, *Foundational Learning and Rehabilitation: An Investigation of the Rehabilitative Strategies of Postsecondary Violin Instructors.* Please see the following attached items: a letter of information and a consent form. If you would also prefer hard copies, please let me know, and I will mail them to you promptly.
If you agree with the details of the study, it would be greatly appreciated if you could return the signed consent form as soon as possible. Following, we can then set up an interview time at your convenience.

Sincerely,
Vanessa Mio

Recruitment Email to Committee

I hope that you are all enjoying the semester so far! I just wanted to send you a brief update about my recruitment and also ask a few questions.
In the summer, I compiled a list of 321 universities/colleges in the United States and Canada and used a random table of numbers to determine the list of 30 potential institutions. I emailed the potential participants from the first 15 schools initially, and then two weeks later, I sent the email again. Two weeks later, I emailed the potential participants from the remaining 15 schools, and sent the email again, two weeks after the first initial email. There were approximately 80 potential participants in total from the 30

institutions. I sent the emails in two week intervals to give them time to respond, and sent each participant two emails in total. I have five people who have agreed to participate as a result of this random sampling. Dr. Bayley and I would like to know what your thoughts are with regards to obtaining a few more participants. Would it be possible to add an element of convenience sampling or snowball sampling to the random sample? One of the participants strongly suggested that I contact a potential participant for my study. Should I include this additional individual if they agree to participate?
I look forward to hearing from you!

Thank you,
Vanessa Mio

Final Recruitment Email to Potential Participants

I would like to thank those individuals who have offered to participate in my doctoral research study, *Foundational Learning and Rehabilitation: An Investigation of the Rehabilitative Strategies of Postsecondary Violin Instructors*. I greatly appreciate your input. For those who have not had a chance to respond, it is not too late!
As a graduate of Indiana University and a former student of Mimi Zweig, I am interested in investigating postsecondary violin instructors' experiences with corrective pedagogy, and their strategies (e.g., pedagogical, emotional, physiological) in implementing corrective pedagogy with first-year violin performance students.
If you are interested in being a part of this study, please email me back, and I will send you further information regarding the study.

Sincerely,
Vanessa Mio

Document Included in Package with Research Questions, Interview Questions, and Notebook

Thank you so much for agreeing to be a part of my study, *Foundational Learning and Rehabilitation: An Investigation of the Rehabilitative Strategies of Postsecondary Violin Instructors*. Included is a copy of the research questions, interview questions, and a small notebook. The journaling in the notebook does not have to be extensive, just simply ideas, reflections, notes, comments, or questions that you may wish to record in relation to rehabilitation in your teaching practice to help with memory recall during the interview.

I greatly appreciate your participation in this study.

Sincerely,
Vanessa Mio

Email Correspondence with Participants after Interview

I would like to thank you again for taking the time to share your pedagogical insights and experiences with me- you have contributed greatly to the study!

If you think that there are any valuable notes or ideas in your notebook that we did not cover in the interview, I would greatly appreciate it if you could mail it back to me.

My address is:
Vanessa Mio
479 MacDonald Avenue
Sault Ste. Marie Ontario
Canada
P6B 1H8

Thanks again,
Vanessa

Happy New Year! I am in the process of analyzing the data from the interview that we had, and I was wondering if I have permission to use your actual name, or if you would prefer that I use a pseudonym?

Thank you so much,
Vanessa

APPENDIX C

Letter of Information for Consent to Participate in Research

LETTER OF INFORMATION FOR CONSENT TO PARTICIPATE IN RESEARCH

Title of Study: Foundational Learning and Rehabilitation: An Investigation of the Rehabilitative Strategies of Postsecondary Violin Instructors

You are asked to participate in a research study conducted by Vanessa Mio, from the Faculty of Education at the University of Windsor. The results will be contributed to a dissertation, submitted to the Faculty of Graduate Studies through the Faculty of Education in partial fulfilment of the requirements for the degree of Doctor of Philosophy in Educational Studies at the University of Windsor.
If you have any questions or concerns about the research, please feel to contact: Dr. Jonathan Bayley, Faculty Supervisor, at (519) 253-3000 ext. 3814.

PURPOSE OF THE STUDY

The purpose of the study is to investigate what postsecondary violin instructors perceive are the reasons why rehabilitation is often required in first-year performance students, what strategies (e.g., pedagogical, physiological, and emotional) postsecondary violin instructors use in order to rehabilitate first-year performance students, and how they implement the various strategies.

PROCEDURES

If you volunteer to participate in this study, you will be asked to:

1. Read a copy of the research questions, and a preliminary copy of the interview questions.
2. Based on the interview schedule, you will receive the research questions, and interview questions at least two weeks prior to the scheduled interview date. In addition to the questions, the principle researcher will also supply a small notebook to encourage journaling of personal reflections or ideas with regards to rehabilitation as it applies to your teaching practice.

3.You will then be interviewed using a semi-structured interview protocol, which will allow for flexibility and an opportunity for deeper insights into various rehabilitative approaches, influences, experiences, and assessment strategies (Berg, 2008; Seidman, 2005). The interviews will be audio-taped using a recording device and manually transcribed to ensure accuracy.
4. Following, participants will be sent via email/mail a transcribed copy of his/her interview and will be asked to check the information for accuracy through the procedure know as member checking (Merriam, 2001).
5. The interviews may take place in person or through Skype if the distance/time frame do not allow for personal contact, and will take less than 60 minutes to complete. Following the initial data collection, I may go back to some individuals to ask follow-up questions via email/Skype.

POTENTIAL RISKS AND DISCOMFORTS

There are minimal foreseeable risks in participating in this study.

POTENTIAL BENEFITS TO PARTICIPANTS AND/OR TO SOCIETY

This study could greatly affect the field of violin pedagogy by addressing an issue that is not currently found in the violin pedagogy literature, and by providing both current and future violin pedagogues with meaningful knowledge surrounding rehabilitation and the importance of correct early development.

COMPENSATION FOR PARTICIPATION

The participants will not receive payment.

CONFIDENTIALITY

Any information that is obtained in connection with this study and that can be identified with participants will remain confidential and will be disclosed only with the permission of the participants. Privacy and confidentiality with regards to the information disclosed in the interviews will be maintained until participants review the transcriptions and agree with what was stated.
The principle researcher will not share any identifying information about the participants or the institutions throughout the study, and will give the participants an alternative name. If the participants agree to be identified, they will give permission to the principle researcher. If one participant chooses not to be identified, all participants will maintain their alternative names throughout the duration of the study.
All participants have the right to review/edit the audio recordings before the final transcriptions are completed.

The principle researcher will maintain the raw data in an organized manner through audio and paper files to allow for efficient retrieval and analysis. The audio files will be uploaded from the recording device onto a computer and kept in a secure folder accessed by a passcode. The audio files will be manually transcribed, verified, and then erased from both the recording device and computer within one year from the initial data collection. The paper files/notebooks will be kept in a secured (locked) drawer, where they will be kept until transcribed for the data analysis, and then shredded within one year from the initial data collection. Only the principle researcher and the faculty supervisor will have access to the information contained within the audio files and the transcripts. The principle researcher maintains the right to review all audio files and transcripts with the faculty supervisor at any time throughout the duration of the study.

PARTICIPATION AND WITHDRAWAL

It is optional and entirely voluntary to participate in this research study. All participants have the right to withdraw from the study at any time without consequences, and have the option of removing the data from the study.

FEEDBACK OF THE RESULTS OF THIS STUDY TO THE PARTICIPANTS

All participants will be sent a transcription from the interview via mail/email within two months of the interview to review the content. If follow-up questions are required, the revised transcriptions will also be sent for review before the data analysis begins.

SUBSEQUENT USE OF DATA

These data may be used in subsequent studies, in publications and in presentations.

RIGHTS OF RESEARCH PARTICIPANTS

If you have questions regarding your rights as a research participant, contact: Research Ethics Coordinator, University of Windsor, Windsor, Ontario, N9B 3P4; Telephone: 519-253-3000, ext. 3948; e-mail: ethics@uwindsor.ca

SIGNATURE OF INVESTIGATOR

These are the terms under which I will conduct research.

_____ _____

Signature of Investigator Date

APPENDIX D

Consent to Participate in Research

CONSENT TO PARTICIPATE IN RESEARCH

Title of Study: Foundational Learning and Rehabilitation: An Investigation of the Rehabilitative Strategies of Postsecondary Violin Instructors

You are asked to participate in a research study conducted by Vanessa Mio, from the Faculty of Education at the University of Windsor. The results will be contributed to a dissertation, submitted to the Faculty of Graduate Studies through the Faculty of Education in partial fulfilment of the requirements for the degree of Doctor of Philosophy in Educational Studies at the University of Windsor.
If you have any questions or concerns about the research, please feel to contact: Dr. Jonathan Bayley, Faculty Supervisor, at (519) 253-3000 ext. 3814.

PURPOSE OF THE STUDY

The purpose of the study is to investigate what postsecondary violin instructors perceive are the reasons why rehabilitation is often required in first-year performance students, what strategies (e.g., pedagogical, physiological, and emotional) postsecondary violin instructors use in order to rehabilitate first-year performance students, and how they implement the various strategies.

PROCEDURES

If you volunteer to participate in this study, you will be asked to:

1. Read a copy of the research questions, and a preliminary copy of the interview questions.
2. Based on the interview schedule, you will receive the research questions, and interview questions at least two weeks prior to the scheduled interview date. In addition to the questions, the principle researcher will also supply a small notebook to encourage journaling of personal reflections or ideas with regards to rehabilitation as it applies to your teaching practice.

3. You will then be interviewed using a semi-structured interview protocol, which will allow for flexibility and an opportunity for deeper insights into various rehabilitative approaches, influences, experiences, and assessment strategies (Berg, 2008; Seidman, 2005). The interviews will be audio-taped using a recording device and then manually transcribed to ensure accuracy. 4. Following, participants will be sent via email/mail a transcribed copy of his/her interview and will be asked to check the information for accuracy through the procedure know as member checking (Merriam, 2001).
5. The interviews may take place in person or through Skype if the distance/time frame do not allow for personal contact, and will take less than 60 minutes to complete. Following the initial data collection, the principle researcher may go back to some individuals to ask follow-up questions via email/Skype.

POTENTIAL RISKS AND DISCOMFORTS

There are minimal foreseeable risks in participating in this study.

POTENTIAL BENEFITS TO PARTICIPANTS AND/OR TO SOCIETY

This study could greatly affect the field of violin pedagogy by addressing an issue that is not currently found in the violin pedagogy literature, and by providing both current and future violin pedagogues with meaningful knowledge surrounding rehabilitation and the importance of correct early development.

COMPENSATION FOR PARTICIPATION

The participants will not receive payment.

CONFIDENTIALITY

Any information that is obtained in connection with this study and that can be identified with participants will remain confidential and will be disclosed only with the permission of the participants. Privacy and confidentiality with regards to the information disclosed in the interviews will be maintained until participants review the transcriptions and agree with what was stated.
The principle researcher will not share any identifying information about the participants or the institutions throughout the study, and will give the participants an alternative name. If the participants agree to be identified, they will give permission to the principle researcher. If one participant chooses not to be identified, all participants will maintain their alternative names throughout the duration of the study.
All participants have the right to review/edit the audio recordings before the final transcriptions are completed.

The principle researcher will maintain the raw data in an organized manner through audio and paper files to allow for efficient retrieval and analysis. The audio files will be uploaded from the recording device onto a computer and kept in a secure folder accessed by a passcode. The audio files will be manually transcribed, verified, and then erased from both the recording device and computer within one year from the initial data collection. The paper files/notebooks will be kept in a secured (locked) drawer, where they will be kept until transcribed for the data analysis, and then shredded within one year from the initial data collection. Only the principle researcher and the faculty supervisor will have access to the information contained within the audio files and the transcripts. The principle researcher maintains the right to review all audio files and transcripts with the faculty supervisor at any time throughout the duration of the study.

PARTICIPATION AND WITHDRAWAL

It is optional and entirely voluntary to participate in this research study. All participants have the right to withdraw from the study at any time without consequences, and have the option of removing the data from the study.

FEEDBACK OF THE RESULTS OF THIS STUDY TO THE PARTICIPANTS

All participants will be sent a transcription from the interview via mail/email within two months of the interview to review the content. If follow-up questions are required, the revised transcriptions will also be sent for review before the data analysis begins.

SUBSEQUENT USE OF DATA

These data may be used in subsequent studies, in publications and in presentations.

RIGHTS OF RESEARCH PARTICIPANTS

If you have questions regarding your rights as a research participant, contact: Research Ethics Coordinator, University of Windsor, Windsor, Ontario, N9B 3P4; Telephone: 519-253-3000, ext. 3948; e-mail: ethics@uwindsor.ca

SIGNATURE OF RESEARCH PARTICIPANT/LEGAL REPRESENTATIVE

I understand the information provided for the study *Foundational Learning and Rehabilitation: An Investigation of the Rehabilitative Strategies of Postsecondary Violin Instructors* as described herein. My questions have been answered to my satisfaction, and I agree to participate in this study. I have been given a copy of this form.

_____

Name of Participant

_____ _____

Signature of Participant Date

SIGNATURE OF INVESTIGATOR

These are the terms under which I will conduct research.

_____ _____

Signature of Investigator Date

APPENDIX E

Consent for Audio Recording

CONSENT FOR AUDIO RECORDING

Participant Name:

Title of the Project: Foundational Learning and Rehabilitation: An Investigation of the Rehabilitative Strategies of Postsecondary Violin Instructors

I consent to the audio recording of interviews.

I understand these are voluntary procedures and that I am free to withdraw at any time by requesting that the recording be stopped. I also understand that my name will not be revealed to anyone and that taping will be kept confidential. Recordings are filed by number only and stored in a locked drawer.

The destruction of the audio recordings will be completed after transcription and verification.

I understand that confidentiality will be respected and that the audio recording will be for professional use only.

_____ _____

(Research Participant) (Date)

APPENDIX F

Semi-Structured Interview Protocol: Interview Questions

Personal/Demographic Background

Q: How long have you been teaching violin?

- How long have you been teaching violin at the postsecondary level?

Q: What is your present teaching assignment?

- Do you teach solely violin, or do you also teach ensembles, or academic classes?

Early Instruction

Q: How old were you when you began your violin studies?

Q: Who were your early violin teachers before university?

- Were they professional musicians, performer-teachers, teacher-performers?

Q: Was there a specific methodology that you were encouraged to follow during your early violin instruction?

- Suzuki? Other?

Q: What did your teacher(s) emphasize most during your lessons (e.g., posture, tone, bow, memorization, etc.)?

Pedagogical Influences

Q: Who were your most influential violin teachers?

- Why?

Q: Regarding pedagogical genealogy, who did your instructor(s) study with?

- Do you see yourself as being a part of a violin genealogy with respect to pedagogy?

Q: How did your previous violin instructors influence you with respect to your present pedagogy or teaching strategies?

Rehabilitation

Q: Did any of your violin instructors engage in rehabilitative pedagogy?

- If so, what were your experiences of having personally been involved in rehabilitative pedagogy (e.g., specific technical and psychological challenges)?

Q: The "re" in "rehabilitation" implies that one was at one time "habilitated" with a specific ability. According to the Oxford Dictionary, to "rehabilitate" means to "restore someone to health or normal life by training and therapy . . . return something to its former condition." Do you believe that the students who you engage in a rehabilitative process were at one time playing correctly and then fell into unhealthy habits, or that the deficiencies were established at the outset of instruction?

Q: What percentage of your first-year students are in need of rehabilitative pedagogy?

- Do you believe that every student needs some degree of rehabilitation? Do you have any students that require little to no correction?

Q: Why do you think some students need rehabilitation and others may not?

Q: How do you assess the need for correction/rehabilitation?

Q: What aspects of your first-year students' playing most frequently require correction?

Q: Do you have a specific pedagogical methodology for corrective learning?

- To what degree do the individual needs of your students determine how you will proceed with your rehabilitative pedagogy?

Q: How do you address incorrect posture, left hand, bow arm, shifting, intonation, vibrato?

Q: How has your teaching pedagogy evolved over time with respect to rehabilitation or reeducation?

Q: Are there times when rehabilitative pedagogy could be counterproductive?

- Why might this be so?

Q: What do you believe have been the responses of your students when you involve them in rehabilitative pedagogy?

Q: What have been some of your most challenging experiences when implementing corrective pedagogy, and why?

Q: In pedagogy and teaching, self-efficacy is often described as the perception a student has of their own abilities and how they perceive the views of others towards themselves. Is there a sense of self-efficacy that emerges throughout the rehabilitation process?

- If so, how is this expressed by students?

Q: With respect to successful outcomes for rehabilitative pedagogy, what do you believe is most important/influential?

- Why do you think that is the case?

Q: What are your greatest rewards as a violin instructor with respect to rehabilitative pedagogy?

ENDNOTES

[1] Applied music instruction refers to one-on-one interaction within a music studio, as opposed to classroom or group instruction.

[2] In Canada, university education is considered postsecondary, while college education is collegiate. In this study, "postsecondary" and "college" are used interchangeably by the participants, but refer specifically to university education.

[3] The term "performance" refers to students enrolled in applied violin lessons, regardless of whether their degree program has an education or performance focus. All students are expected to perform in master classes and pass juries to display their technical/musical proficiency on the instrument as a degree requirement.

[4] Although instrumental instruction prior to university in the United States is often classified as "precollege," the term "preuniversity" is used in this study to refer to violin study before university. This could include instruction within the context of the public school sytem, private instruction, or conservatory instruction.

[5] Sadly, Mr. Stephen Clapp passed away on January 26th 2014, as I was completing the data analysis of this study. He will be forever remembered and respected for his dedication to music education, and his contribution to this research.

VITA AUCTORIS

Vanessa Mio was born in Sault Ste. Marie, Ontario, in 1982. Vanessa received a Master of Music, a Bachelor of Music, as well as a Performance Diploma from the Indiana University Jacobs School of Music where she studied violin with Mimi Zweig, Kathleen Winkler, and Baroque violin with Stanley Ritchie. In addition, Vanessa received an ARCT Teachers Diploma in piano from the Royal Conservatory of Music. Vanessa has spent summers touring with the National Youth Orchestra of Canada; participating in the Casalmaggiore International Festival in Italy where she studied chamber music with the Penderecki String Quartet and other internationally known artists; teaching in Tuscany for a Professional Teachers Workshop alongside Mimi Zweig; and performing in the Kitchener-Waterloo Symphony.

Vanessa's passion for teaching was sparked at the Jacobs School of Music where she had the opportunity to serve as Mimi Zweig's teaching assistant for several years with the Indiana University String Academy. The Academy is respected as one of the finest training programs for young violinists in the world. Vanessa brought this exceptional experience to Waterloo, Ontario, where she is currently a Violin Instructor with the Wilfrid Laurier String Academy. In addition to teaching private lessons and group classes with the Academy, Vanessa also teaches postsecondary violin performance majors (applied lessons) and a violin pedagogy course at Wilfrid Laurier University. Recently, Vanessa has had the opportunity to adjudicate various festivals across Canada, present her research at provincial conferences, and attend the Starling-DeLay Symposium for Violin Studies at The Juilliard School.