Discovery, video self-confrontation, and intervention as a means to improve quality of individual instrumental practice

by

Daniel Nagib Brecht-Haddad

B.M. & B.A., University of Washington, 2005
M.A., Florida Atlantic University, 2007

AN ABSTRACT OF A DISSERTATION

submitted in partial fulfillment of the requirements for the degree

DOCTOR OF PHILOSOPHY

Department of Curriculum and Instruction
College of Education

KANSAS STATE UNIVERSITY
Manhattan, Kansas

2017

Abstract

The purpose of this research is to discover influences that guide practice habits of collegiate instrumental music students, explore student self-discovery of practice needs, and create strategies that can be used to improve the quality of students' individual music practice. To best address these intentions, three unique yet sequential studies were implemented. The *Discovery* study focused on the uncovering prior experiences that shaped students' practice habits before entering college to get an idea of how current practice habits were formed. The *Video Self-Confrontation* study had participants watch a video recording of a practice sessions to address possible gaps between their perception and the reality of their practice habits. The video self-confrontation prompted discussion about possibilities for enhanced practice skills. The *Intervention* study expanded upon information from previous studies to develop and administer personalized interventions designed to address weaknesses and identify effect on participants' practice habits.

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Approved by:

Major Professor
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Dedication

This document and the research contained within is dedicated to the Cheyenne High School Band students from 2007 – 2014 with whom I had the good fortune to interact with and learn from in my seven years in Las Vegas. Their journey served as the genesis of my interest in the topic of efficient and effective practice and served as a sort of test case as I started exploring and implementing various strategies intended to help improve the success of the program, both through failures and successes. Their hard work and willingness to try and retry what was asked of them and the progress we made will forever be one of my most cherished memories. It was an honor and a privilege to have gotten to know and work with you all.

Chapter 1 – Introduction

Time is a precious and non-renewable resource. For collegiate music education students, effective use of time, combined with personal and musical achievement goals can lead to continual enhancement and satisfaction of success. Ineffective use of time can lead to late nights, missed assignments, and a lack of preparation in classes and performance obligations. A common refrain from instructors is that students' quality and quantity of individual practice is insufficient. Inefficient and ineffective use of time through practice are causes for stress and possible eventual burn out.

Substantial research has documented effective practice strategies (Duke, Simmons, & Cash, 2009; Ericsson, Krampe, & Tesch-Römer, 1993; Erricson, 1997; Madsen, 2004). These studies increasingly argue that quality, not quantity of time is the key for unlocking the highest levels of efficiency and ability. Given scholarly insights, the question that pervades is: why aren't students more deliberate during their practice time? One cause may be a lack of knowledge about effective practice strategies. Another consideration could be a need for enhanced awareness of improvement needs.

Developing more effective and efficient practice habits are the most successful means by which students can reclaim (or rather, redistribute) their time while consistently performing at a high level and experiencing continued growth (Madsen, 2004; Williamon & Valentine, 2000). Quality performance ensembles might be more easily attained with less stress on the music teacher if their students were simply better prepared. If teachers can guide students' enhancement of individual practice, then commitment to musical growth and improved practice habits might result. Everyone involved would enjoy the entire process, be able to connect with

the emotional and creative side of music, and experience greater musical growth and fulfillment if students committed themselves to improving practice habits.

Research Purpose

The purpose of this research is to discover influences that guide practice habits of collegiate instrumental music students, explore student self-discovery of practice needs, and create strategies that can be used to improve the quality of students' individual music practice. To best address these intentions, three unique yet sequential studies were implemented. Independent practice, the time after instruction when a student works toward mastery of skills or concepts, is widely recognized as a critical component of improvement in music performance. There are many different approaches and theories about the process of practice and its effectiveness (Burwell & Shipton, 2011; Coffman, 1990; Duke, et al., 2009) but these quantitative studies almost exclusively deal with larger groups of participants and do not address how individual students develop or refine practice habits. These studies aim to help bridge the gap between practice theories and optimal experiences.

Three prominent constructs concerning practice were used as a foundation for this study. The first is the concept of deliberate practice; that it is more than the quantity but rather, the quality of practice that matters most (Ericsson, et al., 1993). Deliberate practice is a regimen of effortful activities designed to optimize improvement and includes activities that have been specially designed to improve the current level of performance (Ericsson, Krampe, & Tesch-Römer, 1993, pp. 363 & 368). These activities lead to an increased quality of practice through recognition and repetition when a skill is being performed at the highest levels; i.e. the behavior we want to emulate and the habit we want to create. The second is the consideration that video self-confrontation can expose needs for effective practice habits. Confrontations create

conditions in which either a conflict will arise or a new awareness will emerge (Cohen, 1982, pg. 3). Video recordings are considered powerful external mediators to facilitate self-confrontation (Perlberg, 1983, pg. 639). Through this self-observation, the participants will compare their expectations with what they observe and reconcile any perceived difference. This greater self-awareness will provide opportunities to devise strategies to address discrepancies that are negatively affecting their performance. A recent theory based on cognitive considerations is encapsulated in the construct of "Bright Spots." Bright spots, as they relate to improvement, are most notably tied to Chip and Dan Heath (Heath & Heath, 2010). They describe bright spots as successful efforts worth emulating; identifying the most successful moments and copying those "bright spots" to increase future success.

The Need for this Research

The bulk of research available about practice strategies focuses on identifying characteristics of strategies that work best for the majority of people using large sample sizes facilitated mostly by surveys and questionnaires (Byo & Cassidy 2008; Evans & McPherson, 2014; Hamann & Frost, 2000). Literature that qualitatively explores experiences as they relate to the quality of music practice strategies is not currently available. Additionally, there is no current research that explores the physical act of practicing and the internal processes that motivate it with the kind of depth necessary to discover individual needs. Lastly, collaboratively developing and implementing personalized interventions with the express purpose of improving practice habits has not been formally researched.

Current research has explored how students become increasingly capable of executing strategies that facilitate their own learning once they begin formal education (Moely et al., 1992; Moely et al., 1995). Others show that the quality of these strategies help explain their success

while in school (Harris & Pressley, 1991; Siegler, 1996). High achievers are identified by their ability to select and apply appropriate strategies to help them learn faster. In doing so they can integrate new knowledge and skills more quickly (Bjorklund, 2000). Regrettably, there is little information dealing with these ideas in the context of music and individual practice of an instrument. What little research exists regarding the influence of background factors is focused more on self-efficacy than quality (Cahill Clark, 2008).

Available research commonly only addresses one aspect of practice. Some focus on the mental vs. physical acts of practice (Coffman, 1990) while a number of studies explore parental impact on ability (Davidson et al., 1996; Sloboda & Howe, 1991). Other studies have found that quality of practice is more important than quantity (Pitts, Davidson, & McPherson, (2000; Williamon & Valentine, 2000). Hart (2014) comes closest to the idea of intervention but his three levels of handouts are only partially customizable and his research stops short of assessing the effect that they have. This research is unique in that it aims to add to the understandings of the students' internal thought processes while practicing and how those beliefs were developed. It further explores ways to modify practice habits through a process of video self-confrontation and collaboratively developed interventions designed to improve the individuals' practice quality.

Rationale

A habit, from the standpoint of psychology, is a fixed way of thinking, willing, or feeling acquired through previous repetition of a mental experience (Andrews, 1903). Practice is the act of repeated rehearsal of a behavior or engaging in repeated activity for the purpose of improvement or mastery (Practice, 2015). Practicing a musical instrument can be simply stated as the deliberate development of habits through meaningful repetition. Simple repetition alone is

not effective in achieving the most meaningful results. Deliberate practice is a regimen of effortful activities designed to optimize improvement and includes activities that have been specially designed to improve the current level of performance (Ericsson, Krampe, & Tesch-Römer, 1993, pp. 363 & 368). Deliberate practice, video self-confrontation, and bright spots aspire to design a customized intervention used to improve the current level of performance through repetition in order to develop autonomic habits. The key to developing these desirable habits is not just repetition, but correct repetition. This is illustrated by recent research on the brain regarding myelin and its effect on the nervous system as stated in Daniel Coyle's, *The Talent Code*:

1. Every human movement, thought, or feeling is a precisely timed electric signal traveling through a chain of neurons—a circuit of nerve fibers.
2. Myelin is the insulation that wraps these nerve fibers and increases signal strength, speed, and accuracy.
3. The more we fire a particular circuit, the more myelin optimizes that circuit, and the stronger, faster, and more fluent our movements and thoughts become.

Skill, then, is myelin insulation that wraps neural circuits and that grows according to certain signals (Coyle, 2009). This is further elaborated as it relates to music in an article published in the *Journal of Music Education*:

> Each new experience causes the brain's neural network to expand through the growth of dendrites sprouting from nerve cells in the brain. These dendrites electrically communicate information for processing through chemicals that enhance the electrical impulses the brain uses for communication, known as neurotransmitters. If information is experienced repeatedly, the brain becomes more efficient in this communication by

> building a fatty coating on the brain cell's axons. This fatty substance is called myelin, and its production is referred to as myelination. This process of myelination increases the brain's efficiency in processing and is therefore critical to the learning process. Repeated exposure to a stimulus causes the brain to respond more quickly to that stimulus, enhancing learning, retention, and recall. The brain is actually changing, being molded by experience. This process is the foundation of learning (Curtis & Fallin, 2014, p. 53).

Deliberate practice leads to an increased quality of practice through recognition and repetition when a skill is being performed at the highest levels; i.e. the behavior we want to emulate and the habit we want to create. The more that skill is correctly replicated, the more an individual is able to make a habit of performing at the highest levels they are currently capable of and the more quickly and expertly they will develop.

Questions, Assumptions, Limitations

Each study will be presented as a chapter sequenced to address the global phenomenon of practice.

The first study is chapter 3, titled *Discovery: The Effect of Background Factors on Practice Habits of Collegiate Music Education Students*. The questions used to guide this study are:

1. What beliefs support the practice habits of collegiate music education students?
    a. What are collegiate music students' personal achievement goals?
    b. What do they perceive as their strengths and weaknesses of their practice habits?
    c. What habits are exhibited during individual practice sessions?
    d. What do collegiate music students attribute to affecting/developing their practice habits?

The second study is chapter 4, titled *Video Self-Confrontation: Exposing the Gap Between Perception and Reality in Practice Behaviors of Collegiate Music Education Students*. The questions used to guide this study are:

2. How does increased awareness of practice habits, through video self-confrontation, affect collegiate music education students' beliefs about practice?
    a. What do the participants notice in the video that does not match their prior held beliefs?
    b. How does that alter their goals, beliefs, and habits for future practice sessions?

The third study is chapter 5, titled *Interventions Designed to Improve the Quality of Practice in Collegiate Music Education Students*. The questions used to guide this study are:

3. Do collegiate music education students' feelings and habits about practice change when provided with interventions designed to improve the quality of their practice?
    a. What effect do the tenets of deliberate practice have on the participant's practice habits?
    b. What effect does enhanced awareness, facilitated by video self-confrontation have on collegiate music education students' practice habits?
    c. What effect does the awareness and usage of bright spots have on the participant's practice habits?

A potential limitation in the process of this study may have been a lack of participants' diligence and adherence to the tasks prescribed within the studies, in particular the final intervention study. Fortunately, all participants were seemingly receptive in modifying their practice habits and implementing the suggested strategies. When starting the selection process, great effort was made to emphasize the potential benefits to the participants while clearly stating

the time required for their involvement in the studies, which may have resulted in an intentional delimitation. The hope was that this would attract participants who were passionate about improvement and were willing to take the necessary time out of their schedule to faithfully implement the suggested strategies. As such, the following assumptions are foundational for these studies:

- The participants will accept and reflect on feedback and suggestions for improvement.
- The participants will make every reasonable effort to implement the interventions provided.

Definitions

Applied Teacher – The instrument-specific instructor that a college music educator is studying with on their corresponding primary instrument.

Video Self-Confrontation - Confrontations create conditions in which either a conflict will arise or a new awareness will emerge (Cohen, 1982, pg. 3). Video recordings are considered powerful external mediators to facilitate self-confrontation (Perlberg, 1983, pg. 639). Through this self-observation, the participants will compare their expectations with what they observe and reconcile any perceived difference. This greater self-awareness will provide opportunities to devise strategies to address discrepancies that are negatively affecting their performance.

Level of Ensemble – Participants were selected in part due to what ensemble they were placed in at the beginning of the year based on auditions. There are three auditioned ensembles at the school the research took place at including a top, 2nd band, and 3rd band. The highest scoring students are placed in the top band until the instrumentation is complete, the process is then duplicated for the remaining two bands. This was used as the main distinguishing factor between the participants throughout the three studies.

Chapter 2 – Study Overview

Design

This document is divided into three studies, presented as chapters 3 - 5 as stand-alone articles, all focused on the global phenomenon of individual practice. Though they are successively sequenced, each implements a unique methodology. To facilitate each articles independence, some information from the first two chapters is intentionally included across chapters.

The *Discovery* study (chapter 3) focused on the uncovering prior experiences that shaped students' practice habits before entering college to get an idea of how current practice habits were formed. Prior musical experiences were exposed to understand why collegiate music students became musicians and what informed their practice habits. The study explored how their habits have changed over the years, especially in relation to the educational setting (middle school, high school, college).

The *Video Self-Confrontation* study (chapter 4) had participants watch video recordings of practice sessions to address possible gaps between their perception and the reality of their practice habits. The video self-confrontation prompted discussion about possibilities for enhanced practice skills.

The *Intervention* study (chapter 5) expanded upon information from previous studies to develop and administer personalized interventions designed to address weaknesses and identify effect on participants' practice habits. The implementation and educational impact are the focus of this chapter.

The 6th chapter provides a synthesis, analysis, and conclusions drawn from the combined information from all three studies.

Participants

The research site was a large Midwestern university. All interviews took place in a conference room in the building that houses the university's school of music. Three participants were selected using an electronic survey (Appendix A) mailed out to all members of the top three concert bands, all of which are auditioned. The email (Appendix B) stated the length of the study, time commitment, and all other necessary details about their involvement, including digitally recording their practice sessions. Three participants were selected based on the following criteria and priority:

1. One participant from each level of ensemble. There are three auditioned ensembles at the research site including a wind ensemble made up of the highest quality performers selected from audition, 2nd auditioned symphonic band, and 3rd auditioned concert band. The highest scoring students are placed in the top band until the instrumentation is complete, the process is then duplicated for the remaining two bands. This was the distinguishing factor between the three participants.
2. All participants were selected to be roughly (within a year) the same age,
3. at the same point in their degree program,
4. playing their instrument roughly (within a year) the same amount of time,
5. and all playing the same primary instrument.

Selecting a student from each performance level of ensemble allowed for enhanced meaning within conclusions drawn. Some insight can be gleaned from comparing the difference in practice strategies and habits from students with different levels of achievement as measured by the ensemble audition process.

An email sent to all 150 members of the auditioned concert bands resulted in 25 responses. Two sets of students met all the criteria. One set of students was not selected due to the researcher being in a more constant supervisory and instructional role with them. As such, the researcher selected the other group. Additional reasons for the selection of one group over the other centered around the researcher's perception of which group would be more likely to diligently to adhere to the requirements of the studies. When the studies started, each participant was in a different level of ensemble. During the study, students re-auditioned which altered the ensemble environment. This is addressed in Chapters 5 and 6.

Interviews

Open-ended interviews were crucial in discovering the evolution of the participants' practice habits. This format allowed the participants the freedom to recall and discuss their experiences in a way most meaningful to them. There were many reasons for choosing to do qualitative research, but perhaps the most important is the desire to step beyond the known and enter into the world of participants, to see the world from their perspective and in doing so make discoveries that will contribute to the development of empirical knowledge. (Corbin and Strauss, 2008).

Three interviews each were conducted with each participant over the course of eight weeks. At the time of participant selection, the first interview was arranged. Each participant read through and signed the informed consent form (Appendix C) before the first interview and were requested to start recording their practice sessions to have about one months' worth of footage to select from for the video self-confrontation interview. The purpose and focus of the first interview and article was discovery. It was designed as a semi-structured interview with predesigned questions, but also allowed for flexibility so the participant could describe their

experiences and expose emergent lines of thought. During our first interview, participants were informed about the purpose and goals of the study, their potential role, and were asked for their permission to digitally record each session. They were also asked to start digitally video-recording their practice sessions for later review and reflection.

Questions/discussion points included:

- "Describe your average practice session."
- "How do you feel when you practice?"
- "What most needs to improve about your practice habits?"

The second interview was a guided reflection to the selected video-recordings of their practice sessions. These interviews were conducted exactly two weeks from each participants' first interview and included watching selections from the practice sessions they had been recording since their acceptance into the study. Before the second interview, videos were recorded by each participant by whatever means they found most convenient (tablet or laptop computers) and uploaded to either Google Drive or One Drive. Each video was viewed by the researcher prior to the second interview who selected clips that best demonstrated positive and negative practice habits. Consideration was also given to clips that demonstrated varied behaviors and strategies by the students. Participants were instructed not to watch their videos prior to the second interview so that the impact of the video self-confrontation was not lost. During the viewing of the video with the participant the following questions guided the interview:

- "What are you aware of while watching the video that you weren't aware of as it was being filmed?"
    - "What are some of the most important differences you noticed?"

- "How does watching this affect your feelings about practicing and future goals?"
- "After watching this, what will you change about your practice habits?"

To conclude the second interview, the researcher and participant selected relevant interventions to address observed practice challenges and performance goals to be implemented prior to the third interview.

The third interview took place exactly one month after the second interview to give each participant time to implement and assess the effect of their personalized goals developed as a result of video self-confrontation. During this third interview, we revisited each prescribed goal, discussed the participant's success in implementation, and determined what effect it had on their practice habits. Questions included:

- "What has changed about your practice habits and your feelings about practicing over the course of the three studies?"
    - "What do you think has caused this change?"
    - "Do you think this change will persist and why?"
- "What was the most important change that was made and why?"
- "How have these changes affected your attitude and beliefs towards practicing?"

Similar questions were also asked of the participant's applied teacher and the researcher included their observations about change, enhanced understanding, and reinforced goal setting in chapter 6.

Methodological Framework

As each study although sequential, was independent, implementing a unique methodology for each was necessary. The *Discovery* study implemented a case study methodology, which explored the development of each students' practice habits and strategies

throughout the span of their musical careers. The *Video Self-Confrontation* study was designed with phenomenological methodology. The phenomenon of students' perception of their own practice was confronted watching their videos and reflecting upon observed behaviors during practice sessions and unfulfilled intentions. The *Intervention* study evaluated the effect focused and personalized strategies had on practice habits and behaviors.

Though each study was unique in its approach and intent, a consistent and global method for collecting and analyzing data was employed. These studies explored unique aspects of practice behavior. As each participant inhabits unique experiences, independent relationships, and different ways to describe those experiences, a methodology was required that allowed for structured data collection and organization. As such, the constructivist grounded theory methodology was used to guide these studies.

Grounded theory is a systematic methodology in the social sciences involving the construction of theory through the analysis of data (Martin & Turner, 1986). Grounded theory was first presented by Barney Glaser and Anselm Strauss in their book *The Discovery of Grounded Theory.* The text provided a strong intellectual rationale for using qualitative research to develop theoretical analysis (Goulding, 2002). It was largely a protest against a methodological climate in which the role of qualitative research was viewed as preliminary to the 'real' methodologies of quantitative research (Charmaz, 1983). According to the original guidelines (Glaser and Strauss, 1967), the developed theory should:

1. enable prediction and explanation of behavior
2. be useful in theoretical advances in sociology
3. be applicable in practice
4. provide a perspective on behavior

5. guide and provide a style for research on particular areas of behavior
6. provide clear enough categories and hypotheses so that crucial ones can be verified in present and future research.

Since their original publication in 1967, Glaser (1992) and Strauss (1990) have disagreed on how to apply the grounded theory method, resulting in a divergence with each branching off into their own schools of thought. Kathy Charmaz (2002; 2006) introduced and popularized constructivist grounded theory which created more divisions within the field (Bhattacharya, 2007). Constructivist grounded theory reshapes the interaction between researcher and participant in the research process and in doing so brings to the fore the notion of the researcher as author. This interactive relationship between participant and researcher allowed for the formation of data throughout the research process. To facilitate this exchange and construction of new ideas, Charmaz (2006) introduced guidelines with varied approaches to documenting both the participants' responses, through coding, and researcher thoughts through memos, journaling and annotating notes. She also advocates for the development of theoretical categories and to allow for saturation of these categories to get a comprehensive and thorough understanding of what is being studied. Though this methodology is usually concerned with the development of a theory, using this structured process allowed for consistency, organization, and clarity while analyzing the data.

Data Management and Analysis

The interviews were recorded on an Apple iPhone 6s through the native Voice Memos application. Interviews were transcribed on a computer in a condensed form and saved as MSWord files labeled interview 1, interview 2, and interview 3 with the participant's chosen alias being the only identifier. After the interview was transcribed, it was read and analyzed

using open coding, pulling out the most important and influential experiences, using the participants' words and phrases (Saldaña, 2016, p. 106). A copy of the transcript file was made and a sidebar was included to copy the codes across from the original interview text (Appendix E). Coding focused on emergent categories beyond the initial categories defined by the questions.

During the coding process, categories started to emerge and were notated using abbreviations. Categories were created and adjusted as suggested by the content and intent of the coding. Once that was complete, an MS Excel spreadsheet was created with a grid of each participants' pseudonym and the categories. Every code was then copied under the corresponding heading and participant to have all the information in one document (Appendix E). This document allowed for the analysis of codes between participants and categories to more easily discover similarities, differences, and any other effects. The categories for each study informed the creation of axial codes to more clearly reveal possibly meaningful results.

Researcher Reflections

Reflections were written after each interview session as a way of synthesizing and clarifying the researcher's thoughts about the information from the participant. This immediate reflection allowed for salient points and categories to emerge, even before coding. After transcribing each interview, the corresponding reflections were referenced, then added to or modified as new perspectives were considered.

Reciprocity and Ethics

As part of the *Intervention* study, participants were given strategies for improvement and reflection that seemed to positively affect their practice habits. Greater self-awareness was

also reported during the *Video Self-Confrontation* study and this process emerged as one of the most noteworthy experiences out of the three studies.

As all three studies required thoughtful analysis and candor, there existed the probability of vulnerability and the possibility of the participants being uncomfortable and unprepared for revelations that may come about during the interviews. Every effort was made to provide a safe and comfortable environment for exploring and expressing those feelings. The room used was in an area of the building that was not heavily trafficked. Communication with the participants about the study was made only during the interviews and through e-mail.

Trustworthiness and Rigor

To help ensure rigor throughout the studies, analysis of the data included all interview transcripts, video reflections, researcher journals, and applied faculty input. Peer debriefing with a capable and uninvolved third-party was also used to help ensure the strength and validity of the study and its results (Nguyen, 2008).

Though the data collected over the course of all three studies were edited, it was supported by triangulation and confirmed through member checks. Member checks occurred before the submission of the final document and each participant was provided an opportunity to read through the dissertation to make sure they were accurately represented (Sandelowski, 2008).

Chapter 3 - Discovery

Abstract

This study explored experiences of three college music education students prior to enrollment in college and how these experiences influenced habits and beliefs in regards to practice. Little is known about how past events affect current practice techniques in instrumental musicians. This article aims to uncover and describe how past experiences affect the quality of present practice habits. Semi-structured interviews elicited experiences from three college music education students to discover and catalogue each unique history. Information was also collected from applied teachers and researcher observation, then coded, analyzed, and compared for emergent themes. The participant responses tell a story of how events prior to collegiate study of music affect individual practice habits.

Introduction

"A truly scientific account of exceptional performance must completely describe both the development leading to exceptional performance and the genetic and acquired characteristics that mediate it"

(Ericsson et. al, 1993, pg. 1)

Development of practice schema

All musicians and their practice habits are all unique products of cumulative experiences, shaped by beliefs constructed by experience and conceptual synthesis. The experiences in musical and educational development are foundational to a musician's constructed beliefs and habits of individual practice. The theory of constructivism is traced back to the work of Jean Piaget who posited that "knowledge does not come from a mere recording of observations without a structuring activity on the part of the subject" (Paiget, 1980, p. 23). Building upon

Piaget's idea, Jackie Wiggins (2004), a leader in the field of constructivist education enumerated a central tenet of constructivism stating that "People learn through constructing their own understandings as a result of their experiences and interactions with others" (pg. 89). This implies that all knowledge and beliefs about the importance and process of individual practice is uniquely adapted or assimilated into an individuals' existing schema that support practice habits; a framework for organizing and perceiving new information (Maréchal, 2010; Stendler-Lavatelli, 1970) as well as foundational for action. As such, beliefs supporting practice and resulting habits are individualistic and varied. When information fits closely into an already developed schema, it is assimilated into that schema and their understandings adjust accordingly (Garnett, 2013). It can be assumed that practice habits developed over time from prior experience are assimilated into current actions in practice. Information that does not closely match prior experience is either discarded or adapted into a new schema. Knowing the background of students, especially deficiencies or misunderstandings of knowledge and understandings, allows teachers to intervene with new information in ways relevant to student's current understanding so it will not be discarded. This also allows music teachers to address any gaps in knowledge to help develop better and more efficient practice habits. Musicians work to improve their playing ability by practicing, but are there prior understandings and habits held by students that hinder improvement?

Practice Strategies

Current research on practice habits is primarily focused on improving technical facility of performers as a means to serve expression and musicality (Maynard, 2006). Studies have also been done assessing the effect of specific external factors such as parental involvement (Davidson et al., 1996; Sloboda & Howe, 1991), mental vs physical practice (Coffman, 1990),

and private lessons (Hamann & Frost, 2000). All of the research ends up pointing back to one single maxim: quality and variety of practice strategies is directly related to the performance level of the individual (Duke et al., 2009; Hallam, 1997; Williamon & Valentine, 2000). Put more simply, the better practice strategies you employ, the better player you are.

Having numerous ways to approach a musical issue provides for efficient and effective practice sessions (Burwell, & Shipton, 2010). The hope is that students develop numerous strategies for practice throughout their time in music classes but it is hard to know if that actually happens a normal course of action while learning to play an instrument. Exploring students' backgrounds to see what factors have led to their development of practice strategies will provide important information that will allow for addressing deficiencies in their practice habits.
The questions used to guide this study are:

1. What beliefs support the practice habits of collegiate music education students?
2. What habits are exhibited during individual practice sessions?
3. What are their personal achievement goals?
4. What do they attribute to affecting/developing their practice habits?
5. What do they perceive as their strengths and weaknesses of their practice habits?

Method

The purpose of this case study is to discover and understand the influence of past experiences on current practice habits. Applying case study methodology allowed for a comprehensive study of individual participants to capture the uniqueness of contribution to developed practice (Timmons & Kairns, 2012). The participant reflections in response to interview questions represent their verbalized experiences and perceived realities that have been created, developed, and modified to this point in their current beliefs and practice habits.

Discussion exposed how interaction with peers, teachers, and others, have shaped each individuals' schema, which in turn effected their behaviors.

Participants

Three participants from a large Midwestern university were selected using an electronic survey (Appendix A) mailed out to all members of the top three auditioned concert bands. The participants were selected based on the following criteria and priority:

1. One participant from each level of ensemble. There are three auditioned ensembles at the school the research took place at including a top, 2nd band, and 3rd band. The highest scoring students are placed in the top band until the instrumentation is complete, the process is then duplicated for the remaining two bands. This was the distinguishing factor between the three participants.
2. All were to be roughly (within a year) the same age,
3. In at the same point in their degree program,
4. Playing their instrument roughly (within a year) the same amount of time,
5. And all playing the same primary instrument.

Interviews

The semi-structured interview for each participant focused on uncovering evidence of influences prior to college that predisposed current practice habits. Predesigned questions allowed for flexibility so the participant could describe their experiences and expose emergent lines of thought. A conversation about early music experiences served as a starting point for the interviews. Additional questions and discussion points included:

- "Describe your average practice session."
- "How do you feel when you practice?"

- "What most needs to improve about your practice habits?"

Data Collection and Analysis

Each participants' interview was recorded and transcribed, the first phase in the coding process to determine constructs and categories (Saldaña, 2016). As each person, including the researcher, has unique experiences, relationships, and understandings, a constructive grounded theory methodology was used to analyze data during this study. Constructivist grounded theory reshapes the interaction between researcher and participant in the research process and in doing so brings to the fore the notion of the researcher as author. This interactive relationship between participant and researcher allowed for the formation of data throughout the research process. Charmaz (2006) introduced guidelines with varied approaches to documenting both the participants' responses, through coding, and researcher thoughts through memos and journaling. She also advocates for the development of theoretical categories and to allow for saturation of these categories to get a comprehensive and thorough understanding of what is being studied. Using open and axial coding provided a structure and process by which meaningful insights emerged.

Coding focused on recurring and meaningful groups, unified into themes that provided insight into the participant's experiences (Charmaz, 2014). A copy of the transcript file was made and open coding was done in a sidebar, directly across from the original interview text. After breaking down the raw data during the open coding process, meaningful concepts and ideas from the participants began to coalesce and axial codes emerged as relationships were more readily apparent (Benaquisto, 2012). Seventeen categories were generated and applied across all participants' interviews using abbreviations. An MS Excel spreadsheet was created using each participants' pseudonym and with coded data copied under the corresponding categorical

heading (Appendix F). For analysis, categories were compared within, then across participants looking for similarities and differences while developing possibilities about what influences have the most substantial effect on development of practice habits over time. The emerging categories were (in alphabetical order):

Background	Motivation	Strategies
Defining Moments	Perception	Strengths
Experience	Performer as Teacher	Teachers
Family	Practice Habits Social	Values
Future	Self-Awareness & Reflection	Weaknesses
Goals		

The results are represented as vignettes based on excerpts from the transcripts that directly relate to the research questions. The participants' voice is used to describe their experience with researcher commentary used to help unpack and elaborate points and ideas that emerge from the participant.

Lexi

Lexi is from a small Midwestern town that was "very arts oriented". She is currently in the first of three auditioned concert bands at a large Midwestern University. No one in her family has much experience in music. Singing shaped her early musical experiences:

> I always loved to sing growing up, I don't know why. I just loved to sing along to the radio or any of the little kids' songs that we did when I was younger in my family.

Her 5th grade teacher was a strong influence in picking an instrument, "I wanted to play something else but changed my mind". Lessons on her primary instrument started early but she did not get serious about music until high school.

Though she started young and being a part of the band is obviously a big part of her life, Lexi is not really sure why she originally joined band:

> I don't even know why. I think I just wanted to be in it. My mom did band when she was growing up and I don't remember my exact reason for it. I think they just did recruiting things when we were younger and over time it was like, oh, I think I'm just going to do this, and I did it.

Being "good at it" relative to other people in the band is one of the things that motivated her continued participation, "I'm actually kind of okay at this so I'm going to keep doing it and see if I can get better". Others in the program were "pretty apathetic" about being in band and Lexi found she really enjoyed playing music and being in an ensemble:

> I took it probably a little bit more seriously than everybody else. My teacher was very encouraging at that aspect and he was like, you are doing really well, you should continue and do this, and you should want to be better. I was like, okay. I like this, I'm pretty good at it. I should probably continue to see where it goes.

She had a new teacher from 7th grade through high school, "He was probably the biggest influence in my music life career because he used to push me a lot, which was good, though at first it was kind of frustrating". Lexi was pushed to audition for all-state not really knowing what it was. Regardless, she made it on her first try. Teachers seemed to have a very influential role throughout her secondary education:

> They definitely pushed me, but ultimately I made that decision to pursue music. I'm happy with it. I like what I do. I like the people that I've met here. If I would have gone into something else, it just wouldn't have really fit me that well. A lot of what's important to me is the relationships that I build wherever I go. That's why I gravitated towards my

> music teachers, I think. Not for any particular reason, just because I felt comfortable there, it was fun, I had a good time.

Connecting with people is a driving force behind Lexi's continued participation in music. It started with strong connections made with teachers and has continued as an outgrowth of her time playing in ensembles. These connections appear to be foundational in motivating her.

Though musical success came easily throughout Lexi's secondary education, her perception of her abilities was low when she started to study music in college:

> When I first got here you think you're good, and then you see all these other people and you're like, no, I'm awful, I am terrible, why am I here? I didn't have any kind of marching band experience before I got here. That was a big old awakening right there in itself.

This new awareness did not temper her expectations or goals:

> I really wanted to make one of the top ensembles. When comparing myself to other people here, I had no idea what would come out of that at all. When I made the second ensemble my freshman year I thought, oh, I reached one of my goals, that's great. I just wanted to progress from there, and see if I could potentially get better. I became aware of the best players in the studio and worked to be like them.

Lexi used more experienced, successful students to model herself after. She continually adjusted her goals based with an eye towards continued improvement. Once one goal was achieved, another, more lofty goal was set.

> I had to make it into the top ensemble. I was disappointed when I didn't make it and wondered what could I do to separate myself from other people? A lot of the other

players were amazing. My attitude was that I can be just as good as they are if I work at it, and I feel like I did. I worked my tail off to get into the top ensemble.

Even when she made it in to the top ensemble, Lexi did not want to get complacent. Achieving her goals only seemed to motivate her further:

> Being in the ensemble has definitely helped me progress because you see everybody else's talent level, where they are at, and it just makes you want to get better. For me, that's just the extra motivator and intrinsically I think, this is where I need to go, I need to do it, I'm going to get there.

Each new achievement serves as motivation for the next. There was a period of time where she hit a wall and expressed frustration with her practice habits and performance quality:

> Last year was awful, practice was terrible, classes were terrible, I was not a good student last year at all. I tried to develop a routine when school started, right away. I had a calendar and wrote down all my practice room times, trying to stick to it as best I could.
>
> I just try to set goals and follow them as best as I can, which has been pretty helpful.

Lexi became aware when her performance level started to plateau and regress and employed strategies aimed at reversing that trend. This was driven by a seemingly internal desire to constantly improve. She additionally credits friends in encouraging her to improve because she was a senior and needed be "the person to carry the tradition of this ensemble, persona, and what we're all about". This proved to be a powerful motivator. Her current goals reflect an internal motivation:

> I just want to be happy with my personal growth and where I've started and to where I can get to. That's my goal, I want to be proud of how I sound, how I played and know that I did absolutely everything that I possibly could to reach that. I don't want to feel

> embarrassed at all when it comes to that point in time where I have to perform for my family.

Though her early goals focused on specifics such as ensemble placement, personal satisfaction and making her family and friends proud seems to be Lexi's most powerful motivator.

Her practice routine is a fairly standard mix of warm-ups, including scales and etudes, and work on both her solo and ensemble literature. She recognizes how the warm-ups can apply directly to improving her literature but there are times she gets frustrated with a lack of improvement and moves past her scales too quickly:

> I just give up and move on, that's probably not good. I need to take the time and get it right and then move on. That's probably something that I need to focus on to get better at.

When asked about other habits that interfere with quality practice time:

> I get distracted. I have my phone out because that's where my metronome is. If I get a notification I have to check it and it's probably a really bad habit. I know it is. I also get really self-conscious when I hear other people are playing around me, especially if it's another person who plays the same instrument. I can always pretty much tell who it is. That bothers me then I start to play really quiet or I don't play out as much.

That she has not yet been able to address these fixable problems coupled with her performance goals shows a level of cognitive dissonance in need of attention.

Lexi's practice habits have mostly developed since her time in college. She practiced minimally in high school:

> I practiced for all state music and was still super self-conscious about playing in front of anybody. Whenever I practiced, I was at home and so I would like literally find the deepest, darkest part of my basement and set up down there and practice so that my

> parents or my sister couldn't hear me. I never really practiced that much because I didn't want anybody to hear me. I only ever practiced at my lessons with my teacher.

This continues a theme of her teachers being comforting and influential forces in her life. Though struggles with self-consciousness continue, an enhanced sense of purpose have helped improve her practice habits throughout her time in college:

> I practiced probably maybe three times a week when I was a freshman, but it was very short segments. They gradually became a little bit longer and more focused. The older I got, the more serious that I knew I needed to become when it came to preparing my music. Now, I practice almost every day and at least an hour and at least four hours on Tuesdays.

Lexi's practice habits improved in conjunction with constant goal-setting evident earlier. The more challenging the goals, the more time was devoted to practice. Her perceived musical weaknesses influence her practice habits more strongly; "My biggest weakness is technicality. I came in knowing that about myself". She seems focused on improving upon through refined strategies aimed at targeting those deficiencies:

> I just developed better strategies. I've learned how to chunk sections which I didn't even think of before. I start with the easier portion and I make sure that's really solid before moving on to a harder section. I usually airplay through it a couple of times and then I add my actual sound. If that's still not working then I literally go note by note down the scale until it's really ingrained in my fingers. Then I go back and I pick up speed and I add my metronome and usually I get it worked out.

This process has been developed in cooperation with her teacher. The applied teacher works with everyone in the studio to develop strategies aimed at helping the students reach their goals.

Lexi is quick to dismiss the notion that she has any strengths, but when pushed, offers her ability to sing and hear a piece of music before she plays it, a technique which she applies frequently during her practice sessions.

> Musically, I understand how a phrase is supposed to go. My choral background makes my sound really interesting and my musical abilities a lot better than my technicality. Singing a lot of it first because that helps me.

This is a prime example of her background shaping current practice habits and abilities.

When discussing her future, Lexi is not sure of her direction. She would like to pursue an advanced degree in a field outside of music and she would like to move somewhere new to teach. She would like to continue playing but feels that may be difficult. When asked if there is an effect between teaching and playing:

> Obviously if I want to be a teacher I have to know how to play my instrument and know how to work things out so that I could teach somebody else how to do it. I don't necessarily think you have to be super high level performer to be a good teacher. On second thought, I haven't encountered any excellent teachers who aren't at least good players.

Mike

Mike was an "Army brat" and so has moved around quite a bit but, is most recently from a small Midwestern town. He is currently in the second of three auditioned concert bands at a large Midwestern University. Unlike Lexi he did not care for elementary music and the singing that came along with it. In 5th grade his parents put him in band to "give him something to do with his life other than sitting in your room". There were only three instruments left to choose

from and his decision was somewhat arbitrary, going for the “middle option”. Though his parents forced him into band, he grew to enjoy it.

> I quickly became hooked on how great it felt to play with other people. All my friends were in band and, especially going to four different high schools, band was the one place I could fit in. I'd walk into a new place and I could go the band hall and find friends but anywhere else, I always struggled.

Soon after starting in beginning band, Mike’s family moved to a large state with a reputation of having good bands:

> From there, the next year we moved and I started sixth grade beginning band with everyone else all over again. I was mediocre there but I was still able to make the second of four ensembles. The defining moment for me there was that they had four ensembles in the high school and I was the highest placed freshman purely because of my tone. It was not because of my technique and that did not inspire me to work on my technique. That inspired me to sit on my laurels.

After the move, Mike found that even though the quality of bands was higher, he was still able to be successful without a lot of effort. That success seemed to be good enough and did not motivate much further improvement, especially in technical skills. They moved two more times before finally settling down. Going from a state with strong bands to two others that did not have the same reputation, Mike was usually one of the top players:

> I got by on the acclaim I already had and thought, oh, I'm pretty good. I don't need to practice anymore, I can squeak by. Senior year, it finally hit me like, no, music is what I want to do. At that point I thought it was too late. It wasn't. I could've hit up the practice room a lot more at that point, gotten a lot better but I didn't. I didn't think it through.

Mike does not remember many of his teachers, especially those from before high school. What he does remember is not positive. His 6th grade director was his least favorite:

> He had some anger issues and was always throwing stuff, yelling a lot, and storming out of class. He would just throw stuff around, snap kids' sticks into half. He cared, maybe a little too much but he cared.

His 1st high school teacher was more positive:

> He was just caring and willing to put in the time and effort for everyone and to get to know you and help grow you but at the same point wasn't willing to just let you sit there and be.

The last director he had before going to college put forth a lot of effort but was ultimately discouraging:

> He was overqualified for the job. He had his doctorate and was teaching at a high school that was not known for its arts program. We were pretty bad. He definitely tried though. You could tell he put a lot of effort in but he would try talking people out of pursuing music. He sat me down in his office and told us this is not what you want to do, this is not where you want to go.

Despite having a number of negative experiences, Mike continued on with music in college:

> Senior year the only things I was good at were math and science and music. I was in AP calculus and AP physics along with the six kids who came here to be engineers. I was looking at what they were doing and I thought, this is not me. I can do it but I don't enjoy it. I would hate myself doing this for a living. I had to step back and say what would I really like to do and teaching music just came together. Saved me.

Mike's earlier experiences with band seemed to provide him little motivation to improve and he entered college without many of the skills other musicians have at that point. It appeared to instill a sort of helplessness in him. Still, he chose to enter college as a music education major and after auditioning:

> I started my time in college as last chair in the bottom band so I had nowhere to go but up [laughs]. I remained in that ensemble three semesters. when I got called into the ensemble director's office and told that I was wasting my potential. I was told I better shape up, or ship out. At that point, I threw myself in the practice rooms a little bit more often and since then I have consistently been in the second band. I am slowly climbing my way up.

College was the first time Mike was not immediately successful just based on natural talent. It took the threat of being kicked out of band to finally get him to put the necessary time and effort in the practice room. The threat was effective because:

> It was less about you don't know how to do this, more like you could be so much better if you did. It was the knowledge that someone out there cared about me doing this rather than me doing it for their own good, it's me doing it for my own good. The ensemble director framed it more to me. Personally, it impacted me more. Most of my other teachers had the attitude of, you need to practice so the ensemble sounds better, so I don't look bad.

This was the first time that Mike mentioned a teacher taking a personal interest in him. Now that he was motivated, he had to develop some more effective skills and habits to facilitate improvement.

Development of practice habits during his secondary education was almost non-existent due to poor instruction and effort:

> Pre-college I didn't have any practice habits. Teachers never taught that where I was. I'm sure they tried, maybe I just didn't pay enough attention. The biggest development of my practice habits happened my sophomore year of college. I spent a lot of time in the practice room after getting chewed out and finally settled into a practice habit and learned where I needed to be and what I need to be doing.

Part of what was still holding him back was his social group. When he first arrived at college, Mike hung out with other students who were not very motivated to improve:

> I was in a group of friends who were like me. We didn't try much and we all stagnated together. I started trying to improve myself and I realized my original friend group was not who I wanted to be around. I needed to seek out other people who are willing to put in the effort. More recently I've been around people who have better practice habits than I do. Once I started talking with them things just clicked more naturally. Having those types of friends definitely pushes me.

Mike made a conscious choice to remove himself from a situation that was negatively impacting his practice ability and surround himself with people who modeled and discussed good practice habits. Having new ideas and positive attitudes towards practice seemed to be enough to push him to put forth more than a minimal effort:

> Since then, I practice multiple times a week. I start with mechanical exercises and scales after which I'll usually dive into my solo and ensemble literature. That will go on and I have a habit of coming to a practice wall and hitting my head against them until either the wall breaks or I do. Lately, I've been trying to step back, move on to something else for the mean time and then come back or just stop for that time because I'm not making any progress at that point.

Even when motivated to practice, Mike still has practice issues seemingly stemming from the lack of structured practice time up to this point. He has incorporated techniques, passed on to him from his new friends, to help address his constant "practice walls". One method he frequently uses is called chunking and is a common technique utilized when musicians run into a passage of music that is technically challenging. It involves slowing down the music so that it can be played almost perfectly, repeating it multiple times, and then gradually speeding up the tempo. Mike admits that he does not do this as frequently and as consistently as he should "I have a bad habit of taking everything at tempo. I don't slow down as much as I should and I recognize that, and I continue to do it". This cognitive dissonance plagues him in a number of ways during his practice sessions:

> I need to improve my focus. I get distracted a lot. You can't practice if you keep getting distracted every five seconds. I need to work on my patience as well. I've talked about ratcheting down tempos then slowly cranking them up. Sometimes I get a little impatient and start increasing increments. It's a little beyond my ability and I just have to sit there and say, no, stop, you're being dumb. I just feel like I'm not as productive as I could be Not enough time spent practicing. I'd like to at least hit my goal of an hour a day, if not more. I get a little too complacent in life and say, I can do it tomorrow. That needs to stop. I can admit that but kicking habits is really hard.

It is unclear what he is currently doing to improve his practice habits. He is aware of the problems but unable to force the change he realizes is necessary. This will continue to prevent him from improving more consistently.

Regardless of his "stagnation", Mike still has a number of goals.

> Musically, I want to improve. I know I'm not where I should be technically. That's a very big goal of mine, is to improve that in the next little bit. Also, to prepare myself for my career. I realize not as performance major, performance might not be the most important skillset I'll pick up here, but I can't ignore it either

His goals are not always backed up with the skills and habits needed to achieve them. When asked about how he addresses those problems in the practice room, he responds with general statements about using a metronome more and integrating finger exercises and scales. He continually laments his underachievement and lack of progress throughout his time in college:

> I think one of my biggest regrets here is underperforming in concert ensembles. It really hit me lately because all the freshmen moving past me in ensembles. It makes me wish that I would have spent more time on this as a younger student. I realize I need to start spending time on that now. It's not enough to be wish for it to happen, I need to put it to action.

Armed with specific strategies and patience, Mike's motivation has the potential to amount to substantial progress. It seems like that is currently lacking and what will continue to limit him. As he says, there is still time. His positive attitude about practice keeps his goals in reach:

> Even the crappy rehearsals I still walk away smiling, sometimes. I've come to realize that I can really make a difference here and that's what I want most in life. Some people are in it for leading an ensemble, some people want to cultivate great students. I just want to make a difference with people. I've been able to do that here and I'm hooked on that.

Peter

Peter is from an affluent suburb of a large Midwestern city and is currently a section leader in the third of three auditioned concert bands at a large Midwestern University. He started

playing his primary instrument in 5th grade, chosen because "It was the first instrument I could make a sound on". The rest of his family is not very musical. Peter joined band because he "enjoyed general music classes in elementary school" and "really liked playing the recorder" but also in part because a lot of his "friends were doing band and orchestra as well" as everyone in his town started in either band, orchestra, or choir in 5th grade.

Peter's first teacher was a "really goofy, fun guy" and he "really enjoyed going to music class then". Partway through elementary school, he got a new general music teacher that he "didn't like a ton" so he ended up dropping general music since he was "already in band and didn't need the general music classes anymore". Peter did not care for his elementary band teacher either because he "would often cuss and intentionally use his middle finger to demonstrate certain fingerings". Peter "almost quit" but "decided to try in junior high because maybe his teacher would be better". He really liked his junior high band teacher. She "made music really fun, was a lot of fun to be around and was just a nice person". She took an interest in Peter and helped get into jazz band even though he didn't play a traditional jazz band instrument. "It meant a lot that I could participate and not have to pick up a new instrument right away". In high school, his teacher played the same instrument as him but was "very type-A" and Peter "didn't necessarily gravitate towards that aspect of him". The assistant band director had health issues and was replaced by a long-term substitute for the last two years he was in high school. Peter thought the new teacher was "really cool", "the complete opposite of the head director". Peter was motivated to pursue music education in college in large part from his experiences in high school:

> The majority of it came from my experiences as a drum major. I really enjoyed being in front of an ensemble and conducting and leading people through music. I also saw my

> directors and what they did and I thought their jobs looked like a lot of fun because they got to show up and do what they loved every day. The got to play and teach and I wanted music to stick around in my life. I thought it was a good way to combine all of things I wanted to do.

Peter admits that he did not practice much up until college because "I didn't really have to because the music we played in high school was pretty easy for me, so I just kind of went to rehearsal, played, and left." Though he came from a strong program near a large city, he still did not have to practice very often to be successful. His motivation for continuing to participate in band is described in mostly social terms. The aspect of social interaction inherent in the activity is seemingly valued highly. Social pressure, in large part, motivates him to practice:

> Most of the people I know practice on a pretty regular basis and so I didn't want to fall behind so I wanted to make sure that I was on pace with my classmates and my peers so that I was performing well in ensembles and keeping on pace with people in my year in my lessons.

While in high school, Peter started on his secondary instrument which he continued to play his first few years in college. He joined the secondary instrument's studio for his first two years in college. He finally left that studio citing problems with the instructor:

> I did not enjoy lessons because they felt like a performance every week. It was kind of like a practice check-up. It was, did you practice, do you sound the way I want you to sound? It felt kind of totalitarian. I didn't enjoy playing anymore so once I came to that realization I decided to go back to playing my primary instrument. Partially because I had two classes with that studio teacher and so I already knew I liked them, I knew that we would get along.

His current teacher allows him to take hour long lessons as opposed to 30 minutes. In his current studio he "can grow as a musician and try things and do things on my own" and his teacher "is more of a guide to me as opposed to someone who tells me how to play and I found that to be really helpful especially as I'm growing and becoming my own musician".

Peter seems to value personal freedom over more rigid structure in his musical studies. The effects of this are exhibited in his practice schedule:

> I try to practice in the morning every day, around when I have my first class. It's a good time for me to get prepared for the day and to focus in because I haven't had the rest of the day to worry about stuff yet. I try to practice at least every school day and I'll try to get up here on Sunday afternoon if I have time as well.

Still, there are times when he is not able to practice much, if at all over the course of a week:

> It's about my priorities for the upcoming week so if I have a big project coming up or a paper I might need some free time to get some other things done. Usually my practice time is one of the last things to go but as a last resort I'll always have practice time to do something else.

As his practice schedule is somewhat inconsistent, this is also exhibited when talking about the structure of his practice time:

> Generally, I will start with some sort of scale-based thing, then I'll work on an etude, then I'll work on my solo literature or ensemble literature. Stuff like technique, tone, timbre, I'll try and address that and focus on that as I practice as well.

Peter usually sets his practice goals at the beginning of a practice session.

> Usually it's just things I've been having troubles with in ensembles. Licks I can't play very well or something the director has been repeatedly saying in rehearsals that you need

to work out. It depends on how much time I have to practice. I'm more likely to practice for an ensemble if I have the ensemble that day. I'm more likely to practice for a lesson if I have a lesson that day. It depends on the day of the week, it depends on my time.

It does not appear that there is always a lot of preparation that occurs for Peters practice sessions and that goals are shaped more by the most immediate need, based on the amount of time available to devote to practice. Limited time is a practical reality of a college music education student but it can be hard to improve in long-term, general goals such as technique, tone, intonation, if short-term goals are always the focus. He further clarifies:

> I want to be prepared for my lessons and for my ensemble rehearsal. When you're in an ensemble you need to have your part ready so that you can rehearse and be a better group together as opposed to just individuals trying to work out their parts. If you don't prepare for your lesson it's like you're not doing your homework. It's like you show up and you don't know what to work on so your teacher can't help you be a better musician because you haven't put in the work yourself previously.

This reinforces the social aspect of his motivation. He does not want to let his ensemble members down and wants to be prepared for lessons so that there is constant improvement:

> I want to be the best member of an ensemble I can be. I want to show up on time, prepared and ready to rehearse so that we can have a good rehearsal and a good concert.

What has not been made clear up to this point is the habits that he uses to achieve these goals. Most of the discussion is about addressing issues as they become apparent in lesson or ensembles and when pushed on specific strategies, he describes methods that are similar to the other participants. When working on a technical passage he will slow the tempo down, use a metronome, then gradually speed it up. He thinks it is "monotonous and slow" but "works for

most problems". This is similar, though not as detailed, as the "chunking" technique described by Mike. Peter has also tried recording himself though he admits it is infrequent and he does not care for that strategy though he thinks it would be helpful to use more often. Those are the only two strategies mentioned.

Peter is quick to point out some of his self-evident weaknesses in regards to practice. He recognizes a lack of organization leads to sometimes scheduling other things over practice time. He uses his cell phone for a tuner and metronome but admits that can make it easy to spend time looking at social media applications. There are times he heads to the practice room just to log time without a clear focus of what he wants to achieve and he can be late to his scheduled times if he is talking to friends. There seems to be some contradiction when discussing his strengths. He says that he schedules practice room time so that he has set times every day where he can practice, but as stated above, he admits that he misses some of those sessions and is late to others. Peter did make the second ensemble the previous year. He likes his role as section leader in the third ensemble but would like to move back up:

> I like them both for different reasons. I enjoy the leadership position in the third ensemble like running sectionals, I think that's a lot of fun, but I've found the literature isn't quite as challenging and I enjoy the challenge that second ensemble presented me with.

It is not clear why Peter moved up ensembles, then back down. It could be a product of increased strength of the studio, a difference in Peter's practice habits or some sort of combination therein. He implies that he prepares and practices more now as a section leader:

> It makes me want to prepare for the ensemble better than I used to because I'm the section leader and ideally the section leader should be the one with their stuff together the

best. I can have a better grasp on the music and what we need to do as a section to better achieve the desired effect on the audience.

He feels a sense of responsibility to his section, the ensemble, and the audience. This again touches on his more socially based motivations to practice. Though he mentions making his teachers happy as increasing motivation to practice, ultimately it is his personal satisfaction with how he plays that is most important.

Conclusions

This study explored experiences of three college music education students prior to their enrollment in college and how these experiences influence practice habits. The guiding questions will be used as a framework for concluding thoughts:

Question 1: What beliefs support the practice habits of collegiate music education students?

The participants were unanimous in their belief that a good teacher does not necessarily have to be a good performer. As such, they do not prioritize practice sessions most of the time and by their own admission, what time they do spend is not adequate to attaining or maintaining a high level of performance. They also did not have to practice much, if at all, to be the best players in their respective ensembles. They only practiced as much as was necessary to accomplish whatever ensemble goals they had, prepare for non-school related events such as honor bands, and stay the best players in their programs. While they all recognize and wish they would have spent more time practicing at a younger age, habits created throughout the eight years before they got to college were likely hard to break. While they have all been playing their instruments for approximately 12 years, they have really only been developing quality practice habits and skills for a fraction of that time.

The practice habits were more deliberate and detailed from the participants in the higher-level ensembles as was the language used to describe them. Those who used more affective terms such as "making a difference", and "feels deeper" were in higher level ensembles. These descriptors reveal a deeper level of passion about their own making of music and appeared to be the impetus leading to a more technical evaluation of the steps needed for improvement. Improving performance skills on a musical instrument is more than a constantly-running checklist of pieces to be prepared for rehearsals and lessons. It is the technical facility and automaticity on an instrument that serves the musical expression (Maynard, 2006).

Question 2: What habits are exhibited by collegiate music students during individual practice sessions?

There was a large difference in how each participant described their practice habits. The more specific and clearly thought out practice behaviors were described, the more successful the practice habits of the participants in action. Having numerous ways to approach a musical issue provides for efficient and effective practice sessions (Burwell, & Shipton, 2010). The strategies category was reflective of the ensemble performance level based on the number and specificity of the strategies verbalized during the interviews. The number of mentions was similar when looking at responses from the practice habits category as well. They all used similar strategies, "chunking" music and using a metronome to track their progress, but Lexi, who was in the top ensemble, was the most specific in describing how she integrates those techniques. She was also the only one of the participants who had a background in singing and used that extensively while practicing. This could allow for the creation of an aural image and provides a framework that can be compared to the sounds produced by the instrument. That allows for more efficient and accurate error detection and rapid adjustment.

How each participant described their practice routine also seems to correlate with the level of ensemble they were in. The more specific each participant was in scheduling their practice time, the higher the ensemble they were in. Peter said he had a schedule but often showed up late or scheduled other things over it. Lexi had exact days and times, adding up to more time overall, and appeared less likely to miss a practice session.

Question 3: What are collegiate music students' personal achievement goals?

The participants were asked about short and long-term performance and teaching goals. Most of their responses centered on the short-term, specifically only extending to getting their first job. They all mentioned that moving up, either into a higher ensemble or chair, was one of their goals though it appeared this was more of a focus for some than others. Lexi's goals focus on how she wants to feel when she graduates. She wants to make sure that when she graduates she gave "maximum effort" and was able to "make herself better" and be "proud" of her accomplishments. She measures her success in large part on if she is "happy with my growth" and "makes her family proud". The participants in the top two bands talked about goals that focused less on the actual performing of the music and more on the effect of the music and the work that goes into. These more long-term goals seem based on the end result of the performance experience and less on the short-term execution of a piece. This seemed to influence the types of strategies and behaviors they exhibited while practicing. Focus on long-term goals appeared to foster strategies aimed at universal musical elements such as tone while participants with short-term goals spent most of their practice time focused only on demands required by the pieces that were most immediately being prepared for performance.

Question 4: What do collegiate music students attribute to affecting/developing their practice habits?

None of them had to practice much in high school to be one of the best players in band. They all express varying levels of regret that it took them so long to develop consistent practice habits and point to college as when they started taking individual practice more seriously. They all had moments where they finally started practicing more diligently. All of these moments were inspired by one of their college teachers. That personal connection combined with the competition at the college level motivated them, albeit at different levels, to finally develop some sort of practice routine.

Question 5: What do collegiate music students perceive as their strengths and weaknesses of their practice habits?

Lack of focus due to distractions derails the participants practice sessions more than anything else. The all acknowledge that cell phones are a constant issue due to the constant notifications and the ever-present ability to communicate through social media and texting. All of these issues lead to less effective and reduced practice time.

External distractions caused by a lack of self-control are offered as each of the participant's biggest weakness. Electronics and access to social media are powerful draws and though cell phones and laptop computers can provide powerful rehearsal aides through metronome and tuner apps, it appears the negative effects outweigh the positive. It is interesting that each participant points to distractions as the main disrupter of focus in terms of the devices that cause them, but they do not seem to acknowledge the deficiencies in self-control that lead to the distractions. Technical ability is also often cited as a weakness. This can be interpreted simply as a lack of development of fundamental skills for which they attribute to an inborn weakness in technical skills.

Alternatively, the same players who said technicality was a weakness cited musicality as a strength. It could be that musicality may be inherently easier to develop with limited practice time and that technical skills can only be developed through rigorous and focused practice. Musical skills may also overlap with other disciplines while technical skills are more specific to the instrument and thus take more time to refine.

Getting the participants to discuss their strengths proved more challenging. When pressed, Lexi had a particularly hard time confidently stating what she felt was a strength. Mike was able to come up with a few and Peter was able to identify considerably more strengths than either of the other two participants. This could agree with research that shows that those who are less skilled tend to overestimate their abilities while higher-skilled individuals tend to underestimate their abilities (Kruger & Dunning, 1999).

Possibilities for Future Research

Future research should look into the between differences in motivating factors that influence the development of practice strategies. Practice habits are developed at different times throughout secondary and post-secondary education. Identifying the impact of practice habits on performance quality throughout development will contribute to understanding the influence music teachers and instruction has on a young musician's development. Research on the relationship between students and performance literature could expose if there is an effect on practice and performance quality.

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Chapter 4 - Video Self-Confrontation

Abstract

This study explored the reactions and reflections of three college music education students as they watched practice videos, and how this phenomenon altered beliefs about practicing. Participants viewed researcher selected video clips from practice sessions and discussed observations, in particular differences between prior and current conceptions of the practice sessions. Video self-confrontation was used by the researcher to expose challenges and misconceptions about personal practice. Students did not watch the videos prior to the video self-confrontation interview. Through self-observation, the participants compared their recalled expectations with what they observed reconciling perceived differences. This greater self-awareness provided opportunities to devise strategies to address discrepancies that were negatively affecting performance.

Introduction

"What is necessary to change a person is to change his awareness of himself"

Abraham Maslow (as quoted by Stephens, 1971, p. 22)

Lack of self-awareness

"People tend to hold overly favorable views of their abilities in many social and intellectual domains" (Kruger & Dunning, 1999, p. 1). The Dunning-Kruger effect further postulates that low-achieving individuals over-estimate their abilities while high achieving individuals tend to underestimate their abilities. In music performance, this means that less-developed players may find it difficult to accurately assess their ability and can lead them to overestimate said abilities. Without constant external feedback from an instructor, the likelihood of a student being unaware of deficiencies could lead to continually perpetuating bad habits.

Alternatively, students who are consistently challenged beyond their current ability level can become discouraged or overly critical with themselves, leading to negative self-concept (Csikszentmihalyi, 1990). This could severely limit the time spent practicing and its effectiveness, possibly leading them to give up entirely.

Collegiate music education students are provided numerous opportunities for feedback. They instructional acumen is consistently evaluated during their degree program through observations, video recording, and in classroom settings, but hardly any opportunities for feedback about the quality and effectiveness of practice habits. Unless someone is watching them practice, students don't have an opportunity for immediate and honest critique of practice habits. This dearth of relevant information can lead to a lack of awareness contributing to the creation, development, and solidifying of poor practice habits.

Creating opportunities for feedback to collegiate music education students is made easier by video recording practice sessions. Since most phones also function as video cameras and many personal computers have built-in cameras, reviewing behavior and habits via recorded video can be done immediately and on a daily basis. When coupled with feedback and diligent review, video recording practice sessions provide the ultimate accountability tool, useful to both the student and applied teacher. Video self-confrontation offers a means for enhancing self-awareness through analysis of practice videos with the goal of making the student more cognizant of current practice habits and providing opportunities to reflect and adjust their beliefs accordingly (Perlberg, 1983). Through this self-observation, the participants will compare their expectations with what they observe and reconcile any perceived difference. This greater self-awareness will provide opportunities to devise strategies to address discrepancies that are negatively affecting their performance. The questions used to guide this study are:

1. How does increased awareness of practice habits, through video self-confrontation, affect collegiate music education students' beliefs about practice?
2. What do the participants notice in the video that does not match their prior held self-perceptions of skills and habits?
3. How does what they notice in the videos alter their goals, beliefs, and habits for future practice sessions?

Method

The guided reflections of the participants allowed for a greater understanding of the gap between perception and reality of their practice habits. What they noticed and how they responded provided a great deal of useful information about what areas are hidden from the students while they practice and how that alters their beliefs and approach to future practice sessions. Prioritizing the phenomenon of participants watching and responding to videos shifted focus from the observer to the observed and exposed the intentionality of their consciousness (Hammersley, 2011; Holt, 2011).

Participants

Three college music education students were selected from the same Midwestern University. All of the participants were the same age, had roughly the same level of experience, were in the same year in their degree programs, and all played the same primary instrument.

Guided Reflections

The researcher facilitated guided reflections while the participants watched selected video-recordings of practice sessions. They were asked to record their practice sessions for two weeks and submit them to the researcher one week prior to the viewing. Each video was viewed by the researcher who selected clips that best demonstrated positive and negative practice habits.

Consideration was also given to clips that demonstrated varied behaviors and strategies by the students. Participants were instructed not to watch their videos prior so that the impact of the video self-confrontation was not lost. During the viewing of the video with the participant the following questions guided the reflection:

- "What are you aware of while watching the video that you weren't aware of as it was being filmed?"
    - "What are some of the most important differences you noticed?"
- "How does watching this affect your feelings about practicing and future goals?" "After watching this, what will you change about your practice habits?"

Data Collection and Analysis

Each participants' guided reflection was recorded, then transcribed. Open coding provided a process by which meaningful insights emerged and were reorganized creating axial codes, unified categories that provided insight into the participant's experiences (Charmaz, 2014). A copy of the transcript file was made and open coding was done in a sidebar, directly across from the original text. After analyzing down the raw data during the open coding process, meaningful reactions and reflections from the participants began to coalesce and axial codes emerged as relationships became more readily apparent (Benaquisto, 2012). Eighteen categories were generated and applied across all participants' interviews using abbreviations. An MS Excel spreadsheet was created using each participants' pseudonym and with coded data copied under the corresponding categorical heading (Appendix F). For analysis, categories were compared within, then across participants looking for similarities and differences allowing the participants' experience to guide the understanding of the phenomena. The emerging categories were (in alphabetical order):

Challenge	Practice Block	Strengths
Defining Moments	Practice Habits	Struggle
Effort	Progress	Teachers
Goals	Self-Awareness and Reflection	Values
Motivation	Self-Consciousness	Video Insight
Perception	Strategies	Weaknesses

The results are represented as a narrative of the reflection session based on excerpts from the transcripts that directly related to the research questions. The participants' voice is used to describe their experience with researcher commentary used to help unpack and elaborate the emergent experiences while watching the videos.

Lexi

Lexi was from a small Midwestern town. She was in the first of three auditioned concert bands at a large Midwestern University. She commented that in the weeks leading up to the interview, her practice sessions were shorter due in large part to frustration. The frustration stems from her limits while practicing particularly technical passages. When Lexi reaches the edge of what she is capable of, or does not feel like she is continuing to make progress, she often moves on before accomplishing what she had planned. "I haven't really figured anything out that makes me less frustrated, that helps me get over the frustration. I don't know." After thinking about what had changed, she said that "Maybe it's been more effective than it had been. Also, I wasn't on my phone as much."

While watching the video, Lexi noticed a number of things of which she was not aware while practicing. One observation seems to sum up the disconnect between perception while practicing and the reality of watching video of oneself:

> At the time I felt this was one of my better practice session, just overall, I felt really prepared when I went to my lesson this week. I feel like it was one of my more productive practices but now it doesn't seem like I did a whole lot.

In addition to the realization that the initial perception of the practice sessions may not have been entirely accurate, Lexi noticed more specific adjustments that needed to be made such as, "It's just a little bright for my tastes" and "That's the ugliest note ever". She also took note of some of her physical characteristics and how they might affect the quality of practice:

> My facial expressions are just… I look pissed off (laughs). I just look like I'm bored and that I don't care and I care so much but I'm just like (pissed off face). Maybe I should go in and smile in the practice room. Maybe it's a trick yourself kind of thing. If you walk in super happy, maybe you play better (laughs). I was getting tired though. My mouth was just tired.

The longer we watched, the more she became aware emotional connections to the piece and how that could help motivate practice in future sessions:

> I like this piece, especially the beginning. I just have to create that same connection with the rest of the piece. I can tell that I like playing it because I was actually trying to move with the music.

Lexi became aware of some consistent issues that permeated throughout the videos. One of her biggest weaknesses is playing rhythms accurately and in tempo.

> It's hard for me. I don't know. I think it's just how I… I think it was just ingrained in me. Maybe I did it to myself. I always wanted to focus on getting the right notes rather than getting the right rhythms.

The lack of using a metronome seemed to be a core problem that caused the majority of the challenges when viewing the videos provided for the study. These included, "rhythm and getting out of the triple to the duple feel" and getting "really confused switching meters". During a particularly tricky section she admits that "I'm just guessing here and I try not to", but "I don't know how to think about it". When asked why she does not consistently use a metronome, she explained:

> Because I'm finger-oriented. Note-oriented? I don't know. Which I guess it should be the opposite way. I don't put on a metronome until I have some of the fingerings down. I don't know why I do that. I feel like the metronome freaks me out so I don't focus on the fingers, I focus on the rhythm. So I gotta get the fingers down before I get the rhythm sometimes, I don't know. You're just thinking about so many things at one time. I know the specific spots in the music where I freak out so when I know those are coming up I psyche myself out. So that's one problem. Sometimes it's hard to have all of that mentality at once.

When Lexi considers how she should have addressed the issues from the video, and plans for future practice sessions, she proposed a litany of technical adjustments specific to her instrument such as alternate fingerings, warm-up routines that specifically address the literature, and how she could adjust her physicality (embouchure and finger placement) to be more successful. Most of these strategies were geared towards enhancing already self-evident strengths. When pushed about what could be done to shore up the weaknesses evident in the videos, she seems less sure when offering up some possibilities:

> I would probably chunk it more towards the beginning. If I noticed I was messing up, I would probably just work on these two, then add this one, then add this one, which I

> think I did later. I think I should have just picked one note and played through the rhythm and did all the articulations, all the re-tonguing and just played through the rhythm on one note. I feel like maybe I wasn't as focused as I thought I was. I could have spent more focused time on certain things.

Her possible solutions lack the conviction and specificity of her current strategies and the information from the videos appears to confirm what she already assumed as she discussed addressing these issues with her applied teacher:

> That's something that my applied teacher has to harp on me about in lessons. I ask all the time, what are you thinking in your head when you're playing things like this because I don't know how to think about it.

Lexi's thoughts on how to measure a successful performance are broad and general instead of being specifically technical or literature-based:

> I just want to feel proud when I perform. I don't necessarily have to feel like I'm the best because, I'm not the best at all for what I do, but that's ok. I just want to feel proud in how I play my pieces.

When ruminating about not having been more proactive about addressing some of her more glaring weaknesses, "I feel like I'm a pretty good bluffer when it comes to performing like that. I can fake it and get back in there". As she considered how improving upon the deficiencies apparent in the video would help her towards the ultimate goal of being proud when performing:

> If I perform, I'm going to be comfortable. I would hate to play in front of people and look like an idiot and that I didn't put in the time because that's the worst feeling.

Ultimately, Lexi summed up what motivates her in the practice room by saying "Try to love your sound. That's what I try to do".

Mike

Mike was an “Army brat” and so has moved around quite a bit, but was most recently from a small Midwestern town. He was in the second of three auditioned concert bands at a large Midwestern University. Like Lexi, during the time he recorded the videos he practiced “much less” than was normal due to “external stuff” that was effecting his normal practice schedule. Regardless, he remained optimistic and commented that, “Slowly and steadily, we're getting there”.

Mike first talked about some of the challenges he had in recording himself while practicing. “I personally found myself less willing to take risks in the practice room” because "Oh man, someone's going to listen to this later". He talked about his inexperience recording himself and initial reactions further:

> Going back and listening to myself more is that something I've never really done, and so when I was chopping up the videos to send to you I was like; man, this wasn't as good as I thought it was.

One of the first things he noticed was a lack of control in tempo. There was a metronome set up and playing throughout the videos but Mike was the first to comment “Man, I am not as with that metronome as I could be”. When asked if that was something he was aware of while he was practicing, he reflected, “There were certain times I could tell I wasn't, but not nearly as much as I'm noticing now.” Impulsiveness with tempo quickly emerged as a major challenge though he was only partially aware of how it affected his practice quality. In the early part of the interview, it was almost all he addressed:

> I could tell slightly. I know I'm pushing it here, but I want to see what I can push... I was spending a little too much thought on dynamics and not enough on tempo… I was

> bumping this thing up massive clicks at a time. It's a really easy pattern and I'm still not hitting it completely. Being a little over ambitious I think, so I just need to take it slower and focus more on technique and less on just, hey, look, I can play fast.

After mentioning this numerous times, he offered possible solutions for future sessions:

> I should have stopped. My mindset was that these are just warm ups and tempo isn't a big deal, which is wrong. I should have backed it back down and consciously known, hey, this is too fast That would have, if not fixed the problem, then shown me what I was doing wrong by looking at it closer instead of just trying to get through it.

A greatly increased level of self-awareness of this issue seemed to impact his thinking about future practice sessions:

> I definitely need to spend a lot more time slowing down, working basics, and actually, listening to myself, and not just going through the motions.

While watching the different excerpts, Mike continued to notice vast differences between his intentions and what he was observing. This was noticed throughout and lamented: "I need to pay more attention to what I'm playing" and "I'm noticing the problems and then just glancing over them. I need to say, no, these need to be fixed now and in this way."

> I know where there are problems. I just don't realize they're as big as they are. I'm like, okay, that's just a missed connection, I will get it later, instead of realizing, I've missed that connection seven times now. There's more to it than just missing it.

What quickly became apparent was, though there was some awareness of errors, correcting them was not a priority. The standards on which he was basing his self-satisfaction were focused more on speed than accuracy and as such, motived his decision making (Bandura,

1986). Though he becomes increasingly aware of other problems, his focus consistently returns issues with tempo.

> There are tempo problems, and my tone is not nearly where I thought it was. I'm not even focusing on dynamics at this point it's just purely notes. Faster, faster, faster. I was aware it was pushing but wanted to see what it sounded like when taking it up to the marked tempo. I don't have patience.

After viewing all the selected practice excerpts, Mike reflected on possible changes to future practice sessions. He thought about his warm-up routine when first starting his sessions:

> I was just sitting down to practice, and honestly, I don't do nearly as much as I should before I practice, which is bad because then I'm not hearing the right sounds in my ear.

When discussing tempo, he "would definitely stick to the metronome a lot more and just chunk it out". Although multiple examples of self-directed improvements emerged from watching his practice sessions, so did frustrations with a newly discovered need for improvement: "I should be able to do it better. Instead of working on basics, I throw myself at the end goal, hoping to eventually flop my body across the finish line early". Mike arrives at two root causes for his practice issues. He admitted to not spending much, if any time on his ensemble literature outside of rehearsal and that he should probably increase his practice frequency general, identifying specific and strategically placed opportunities: "after ensembles, I could always chunk out an hour." He also blames his mindset, the thoughts and assumptions that drive his decision making, for lack of detail and care spent practicing:

> I feel confident about 90% of it, and that gives me the freedom in my head to not practice. I should definitely be at a 100% for rehearsals because as I always say, I'm not

> out to learn my part there (in rehearsal), even though that's essentially what I've been doing.

After considering what he viewed in the videos, he summarizes the most needed adjustment in future practice behaviors:

> I need to actually listen to what I'm practicing. I'm just going through the motions and saying, "Yes, I practice that." I'm not necessarily improving in my practice. It's not productive so much as just checking a box and saying, "Hey, I practiced."

Peter

Peter was from an affluent suburb of a large Midwestern city. He was in the third of three auditioned concert bands at a large Midwestern University. He also commented that he had an unusually weird couple weeks of practice. While normally striving to practice an hour a day, six days a week, he explained that he had been "super busy. I've had projects and paper assignments to do all at the same time" and that while he felt like he was as "about as productive as usual in each practice session" the sessions were not as frequent as normal.

The first video that was viewed started with a warm-up consisting of scales. Peter commented on consistent fingering issues seemed to plague him throughout his scale work. He was working on a scale in "weird key" that was "messing with him". When asked what may have helped:

> I think I could have chunked it up a little bit better. I could have taken the first octave and really got that into my fingers and once I had that, move on to the second octave, then chain them together a little bit better.

When asked how often he normally uses that strategy:

> Not as often as I should have. I don't feel. I think I was just getting frustrated. I just wanted to move on at that point.

The video was almost half over as we continued watching. He started playing a different exercise that continued to address scales. When asked if that was still the focus he reflected: "Yes, that was for longer than I expected I guess" usually only a quarter of his practice time is devoted to scales and "That's what I thought I was doing". Peter shared his optimal breakdown of a practice session in a previous interview saying it was timed out exactly as "15 minutes for scales, 15 minutes for etudes, and 30 minutes for solo literature or ensemble stuff" (Peter, individual interview, October 19th, 2016). The videos that were provided for this study averaged 35 minutes per session. When this was brought up and compared to previous statements he commented that he "thought they were closer to 45, 50 minutes somewhere there".

> I thought they were longer until I saw the timestamps on the videos because I think I was taking into account getting stuff out, getting to and from the practice room

He estimated that "In ideal world" he would practice five times a week for 35 minutes, then 25 minutes on Saturday" for a total of 200 minutes, or 3 hours and 20 minutes. When asked if he thought that was enough to get everything done he needed to for lessons, his recital, and ensemble, he replied "It is not".

> In my head, I thought my practice sessions were longer than they've ended up being. There's some disconnect there between what I thought I was doing and what I'm actually doing.

Based on these realizations there is a disconnect not only with how long each practice session actually is versus how long he thinks they are, but also cognitive dissonance associated with the

planned amount of practice time per week being insufficient to prepare Peter for his performance obligations.

At that point Peter began working on different exercises and started noticing more specific performance issues:

> I actually noticed that the longer notes, I thought I held those out longer than I had been doing. I didn't think I'd played this section as many times as I have just done.

It appears that the long notes were not played accurately and that he was unaware of this while practicing. In addition, the inaccurate repetitions likely ingrained incorrect habits which will take more time to fix or, if left unaddressed, will lead to a likely permanence of the habit and inaccurate performance. As the video continued, specific issues continued to give way to his issues with time-management. As the practice session moved on to an etude, he discussed the amount of time he spent playing his most error-free piece as:

> More time than needed was spent on it, more time on this probably than other things because I like to play it and it sounds pretty.

Continuing to watch, he reflected:

> I thought my time was used more wisely in the practice room as far as structuring, how I go through each practice session, and what I do and when, and that I took more time when addressing things that I was playing incorrectly.

Though some performance errors were exposed throughout the video, the lack of appropriate usage of time emerged as the more damaging and potentially most easily-addressed problem. Simply by watching the video and being aware of the length and timestamps throughout, Peter became aware that not only was he not practicing as much as he had planned, but the time he had planned was insufficient. This theme continued as the video progressed. While working on a

solo pieces for his recital, Peter moved on fairly quickly. When asked how long he thought he had worked on it:

> Not long enough because my lesson was going to start pretty soon so I had to run through everything before I went up. I think I recall saying to myself, "That will just have to do for today."

This became a theme as he moved through pieces in the limited time he had left:

> Here, I think I moved on too soon. I don't think I had gotten it down as well as I thought I did.

He summed up these struggles and offered a possibility for this habit:

> I'm not spending nearly as much time correcting issues than originally thought. I wonder if it's because so much time is spent thinking about it, rather than physically playing, so it feels longer. I don't know, that could be part of it.

From this, it appears that more time is spent thinking about the error and potential correction than the physical act of playing. This is possibly also leading to a distortion of time, adding to his other time-related issues.

Peter also started noticing some detailed issues that he did not address at the time. He commented that "I could have more with these staccatos", "I could have taken out the tie.", and "Slowing it down would have helped as well." He offered up additional strategies aimed at future practice sessions:

> I could have isolated getting into it and out of it and been more patient with myself when doing so because frustration mounts when I can't play something. When that happens, the plan is to come back later to address it but that rarely happens. Especially things like

> these little grace notes and this little run over there. Now that I'm aware of it, I will take more time necessary to address them and nail it.

Becoming aware of the tendency to skip over the more challenging sections of music should provide Peter not only with a more aware and sound practice strategy, but a better thought out set of goals to guide the practice and use time more efficiently. He also had issues with tempo and did not consistently use a metronome.

> I think there was a section I felt was out of time. I'm trying to tap and understand the rhythm better. I should have used the metronome.

When he was asked about how often he uses a metronome while practicing:

> I think it's more common than I thought it was. Now that I'm thinking about it, I thought I used it more than I do.

As he continued watching this portion of the practice session, he had additional thoughts about how using a metronome could have helped:

> I could've slowed it down a little bit and really thought about where my fingers were moving and when. Then after I had figured out exactly my finger pattern there I should probably go a beat or two out on either end and then get it back into context.

A couple of time during his work on solo literature, Peter stopped playing and spent a few minutes looking at his phone. He is the president of an organization that was putting on an event and some of the members kept texting him asking for guidance. Though it was for a positive reason, he admits that he "was attempting to multitask which may not have been the wisest thing." Time-management was a pervasive theme in all of Peter's practice excerpts. When finished viewing the videos, Peter had some insights and plans for making better use of his time in the future:

> I think I might start planning out practice a little bit more structured. Usually I have a good idea of what I want to do when I get there. I've never written out, I just like had an idea when I go there and see what happens, when I stop practicing, but I think I might try a new approach to that. I might, on my phone, type up like a brief little, an order of what I want to get to and a rough estimate of how much I think it'll take. That way I am using my time in a better manner.

His focus on using his time more efficiently seems especially related to his goals and making the most of his limited time left in college:

> I would like to get up into the second band again before I graduate. It's not required necessarily, but I think it's a good goal.

His priorities remained clear though:

> I think ranked number one right now is my recital. I'll be playing this one of the Brahms's sonatas and then a duet. I need to start structuring my time better and practicing, making all that stuff fit in because recently I've noticed that my time is quickly slipping away. Another short-term goal I have is to practice more over school breaks. I tend not to do that and with the recital coming up I think I want to do that more.

Peter prioritized preparation of his recital over other performance concerns, most notably his ensemble music. Awareness of his rapidly diminishing time both in college and time left to prepare his ensemble appear to have focused his energies and provided additional motivation to increase and become more efficient with his practice time. Faced with set literature to prepare and finite time to prepare them, Peter will have to be more intentional with how he structures his time to be successful.

Conclusions

This study explored the experiences of three college music education students as they watched and reacted to practice videos and how it affected their self-awareness and beliefs about practicing. The participants all became aware of habits that were a hindrance to performance while watching their videos. Some of these habits were already known to them while others were a surprise and created the need for enhanced focus and strategies to address these for future practice sessions. The three guiding questions will be used as a framework for concluding thoughts:

Question 1: **How does increased awareness of practice habits, through video self-confrontation, affect collegiate music education students' beliefs about practice?**

Enhanced Self-Awareness

After watching their videos, all of the participants became aware of ineffective behaviors that were previously unknown to them. This led them to question why they were engaging in these behaviors, how it affected their quality of practice, and what could be done to address them. They proposed strategies for improvement as an immediate reaction to what they were seeing and hearing. They were forced to analyze their thoughts that prompted the behavior caught on tape and became frustrated that what they viewed often varied greatly from what their intentions were. It was clear that they were not always aware of mistakes while playing and even when they were, they either did not know how to correct their mistakes, or the need to stop and address the issue was overridden by a desire to continue playing. As the continued to watch they became more and more perceptive and sensitive to their deficiencies.

When faced with this uncomfortable reality, each participant expressed frustration and regret. Each had unique goals and reasons for wanting to improve, and so, they came up with a

variety of strategies focused on improvement that they had either not previously implemented or not used effectively. They began to realize that, if not attended to, the problems remain and usually become worse. Some realized their attitude towards practicing was predicated more on getting it done than doing it well. They also seemed to realize that the more efficient their practice sessions are, the more enjoyable they would likely be and the better they would play. This caused them to take their practicing, both the planning and the execution, more seriously.

Question 2: What do the participants notice in the video that doesn't match their prior held self-perceptions of skills and habits?

Perception vs. Reality

Differences between the participant's perception and the reality exposed by the videos were easy to notice. Everyone thought they were practicing at a much higher level than was evident in the video and were quick to point out examples that highlighted that gap. There were instances where they were aware of deficiencies in their practice habits but did not realize how substantial an effect they had on the quality of their progress. None of them used their time as efficiently as originally thought whether it was the amount of time spent on a particularly challenging passage or the practice session as a whole. They also observed getting frustrated in the most difficult sections of their music, usually brought on by a lack of progress due to inadequate strategies which caused them to move on before the issue was addressed. These observations gave them context for an overall lack of progress. No one had problems pointing out small but important issues that peppered their practice sessions; problems that would have been readily apparent while observing anyone else but were never addressed or corrected. This shows a fundamental blind spot that individuals may create or develop in regards to personal performance and practice. Increased self-awareness is critical both to identifying areas in need

of improvement and to monitor progress. Digitally recording and viewing practice sessions must happen at regular intervals.

Question 3: How does what they notice in the videos alter their goals, beliefs, and habits for future practice sessions?

Altered Beliefs

Changes in the beliefs of the participants in regards to practice was likely the predictor for future success. One participant suggested the possibility that a more positive attitude would lead to a more enjoyable and more productive practice session. Understanding emerged that not taking the time to approach the music methodically and slowly led to a less than optimal practice session and by extension, performance. This seemed to override the other feelings of wanting to get practice done with quickly and a shift to getting it done well. A shift in mindset will hopefully inspire positive changes in their practice habits. Good enough is not sufficient, practice habits must be continually monitored and refined so that improvement and growth continue and do not stagnate.

Changes in mindset became immediately apparent when discussing goals for future practice sessions and strategies for were immediately offered in reaction to the videos. Two of the participants mentioned emotional goals such as wanting to be proud and comfortable in performance and their proposed changes in their practice habits are driven by these feelings and geared towards that end. Reflections included the need for a more structured practice sessions including pre-determined goal setting and a more consistent and methodical approach in general. The increased awareness brought about by the videos caused a desire for increased mindfulness while practicing. They all said they would spend more detailed time on areas with performance issues instead of ignoring mistakes. They often mentioned chunking more challenging sections

of music which would imply awareness that they were working on sections that were too large to be successful. Increased use of a metronome was a common theme as they act as an external accountability device and allow monitoring progress in an unbiased manner.

Though they all agreed that the need for increased self-awareness and accountability was paramount for continued improvement, none of the participants mentioned an interest in continuing the video self-confrontation process beyond this study. This could have been a visceral reaction to the unpleasantness of watching yourself for the first time and the vulnerability that is inherent in this strategy.

Possibilities for Future Research

All three students became aware of deficiencies in their practice habits to which they were initially oblivious. In response to this enhanced understanding, they all proposed a number of strategies aimed at addressing specific and general issues apparent in their videos. This awareness further exposed additional areas in need of improvement.

The students in this study were taking hour long lessons and participated in a number of ensembles, though opportunities for individualized feedback during rehearsals are not nearly as frequent if they happen at all. That means that during most weeks, the students are likely only receiving an hour of personalized feedback and instruction geared towards improving their abilities. This feedback is almost always geared towards improving playing ability and unless it is specifically planned out, students rarely receive feedback on their practice ability which is directly related to their performance ability. How, then, can still developing musicians be expected to accurately and consistently assess their practice abilities, habits, and behaviors? Applied teachers can only guess what's going on in the practice room based on the current level of the student and possibly on their strengths, weaknesses, and weekly improvement. Having a

process by which students can get immediate and unbiased information allows for constant and meaningful feedback. Watching videos also led to a greater understanding of strengths, weaknesses, and overall progress. Armed with this information, students can adjust and refine their practice habits more frequently and effectively. When brought into a lesson, feedback from their applied teacher can allow for deeper understanding and better decision-making and further refinement.

Video Self-Confrontation additionally provided the students a means for getting feedback without the need of an outside observer. While some insights made possible by videos may not be exposed as readily without a more experienced guide, the participants were easily and quickly able to point out a myriad of practice and performance issues for which they were able to devise effective strategies. This shows, at the very least, that the act of watching videos of their practice sessions was extremely beneficial and powerful in allowing them the opportunity to react and respond. As video recording capabilities are extremely accessible, this potentially provides a powerful accountability process for anyone willing to take the time to record and watch themselves. Though students are often faced with time constraints, it does not appear that it is necessary to record and watch every single practice session. Viewing videos in at least once a week could prove an effective means of improvement, when paired with private instruction and feedback from an ensemble director, could create more opportunities for feedback and growth. Given the level of enhanced awareness the students exhibited in response to their videos, video self-confrontation is likely a worthwhile and effective means of improving practice habits for collegiate music education students.

Given the information and new understandings facilitated by the video self-confrontation process, what effect would customized strategies have at improving deficiencies in practice habits? Questions to guide additional research include:

1. How accurate are the participant's assessments of their weaknesses?
2. How effective will their proposed strategies be at improving these perceived weaknesses?
3. How long will they continue attempts at addressing their perceived weaknesses?
4. Will additional viewing of practice videos continue to be effective at addressing ineffective practice habits and, if so, what is the optimal interval and procedure?
5. How can this process be more widely implemented, especially in secondary education where classrooms are usually larger and more diverse?

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Chapter 5 – Intervention

Abstract

This study evaluated the effect of personalized interventions designed to improve quality of practice for three collegiate music education students. The researcher and each participant collaborated to create a list of personalized goals and interventions designed to address weaknesses and positively effect each participants' practice habits. The interventions were modeled after the tenets of three prominent constructs; deliberate practice, video self-confrontation, and bright spots, as they relate to practice. The implementation and effect of these interventions is the focus of this study.

Introduction

"Practice doesn't make perfect. Perfect practice makes perfect."

- Vince Lombardi

Quality vs. quantity

For collegiate music education students, effective use of time, combined with personal and musical achievement goals can lead to continual enhancement and satisfaction of success. Ineffective use of time can lead to late nights, missed assignments, and a lack of preparation in classes and performance obligations. Inefficient and ineffective use of time through practice are causes for stress and possible eventual burn out. Substantial research has documented effective practice strategies (Duke, Simmons, & Cash, 2009; Ericsson, Krampe, & Tesch-Römer, 1993; Erricson, 1997; Madsen, 2004). These studies increasingly argue that quality, not quantity of time is the key for unlocking the highest levels of efficiency and ability. Given scholarly insights, the question that pervades is: why aren't students more deliberate during their practice time? One cause may be a lack of knowledge about effective practice strategies.

Strategies for Interventions

Developing more effective and efficient practice habits are the most successful means by which students can reclaim (or rather, redistribute) their time while consistently performing at a high level and experiencing continued growth (Madsen, 2004; Williamon & Valentine, 2000). Three prominent constructs concerning practice were used as a foundation for this study. The first is the concept of deliberate practice; that it is more than the quantity but rather, the quality of practice that matters most (Ericsson, et al., 1993). Deliberate practice is a regimen of effortful activities designed to optimize improvement and includes activities that have been specially designed to improve the current level of performance (Ericsson, Krampe, & Tesch-Römer, 1993, pp. 363 & 368). These activities lead to an increased quality of practice through recognition and repetition when a skill is being performed at the highest levels; i.e. the behavior we want to emulate and the habit we want to create. The second is the consideration that video self-confrontation can expose needs for effective practice habits. Confrontations create conditions in which either a conflict will arise or a new awareness will emerge (Cohen, 1982, pg. 3). Video recordings are considered powerful external mediators to facilitate self-confrontation (Perlberg, 1983, pg. 639). Through this self-observation, the participants will compare their expectations with what they observe and reconcile any perceived difference. This greater self-awareness will provide opportunities to devise strategies to address discrepancies that are negatively affecting their performance. A recent theory based on cognitive considerations is encapsulated in the construct of "Bright Spots." Bright spots, as they relate to improvement, are most notably tied to Chip and Dan Heath (Heath & Heath, 2010). They describe bright spots as successful efforts worth emulating; identifying the most successful moments and copying those "bright spots" to increase future success.

The implementation and educational impact of these interventions are the focus of this study. The guiding questions are:

1. Do collegiate music education students' feelings and habits about practice change when provided with interventions designed to improve the quality of their practice?
2. What effect do the tenets of deliberate practice have on collegiate music education students' practice habits?
3. What effect does enhanced awareness, facilitated by video self-confrontation have on collegiate music education students' practice habits?
4. What effect does the awareness and usage of bright spots have on collegiate music education students' practice habits?

Method

Outside of the medical field, only pedagogical methodologies aim to customize, implement, and assess the effect that instructional interventions have on individual learning. Pedagogical studies may be the most analogous process for influencing change and improvement of a phenomenon (Bickman, 2011). Though not formally recognized as a methodology, intervention research "examines the effects of an outcome of interest" (Delucia & Pitts, 2012) which is what this study aims to do in regard to practice strategies. The identification of effect in this study was limited to participant self-report and applied teacher reflection. The depth, richness, and specificity of their comments present vivid and detailed stories that are relatable and easily accessible by other musicians.

Participants

Participants were selected using an electronic survey to gauge interest and willingness to faithfully implement the interventions throughout the duration of the study. To be considered,

students needed to be collegiate music education students who were studying their primary instrument with the university's applied instrument teacher. They were also required to be in one of the school's concert band ensembles in good academic standing. Over 20 respondents met the criteria for selection and three participants were selected in large part due to the researcher's belief that they would be most diligent in their application of the prescribed strategies.

Creation of Interventions

Using information from previous research involving the same participants (Brecht-Haddad, unpublished), weaknesses that were identified prompted the creation of personalized goals and interventions designed to improve each participants' practice habits. Appendix E describes the base strategies that were used. The interventions were modified as necessary to address the specific need of the participant while remaining rooted in one of the three previously mentioned constructs; deliberate practice, video self-confrontation, and bright spots. For example, at the beginning of the study, none of the participants effectively integrated the use of a metronome into their practice habits. An intervention designed to address this problem was created using the tenets of deliberate practice. A detailed and regimented intervention was developed specifying exactly what tempo they would set the metronome to for a given piece of music and the process for slowly and methodically increasing the tempo until reaching the desired speed. Other interventions included maintaining practice logs, one detailing specific short-term goals and plans for achieving those goals and another breaking down difficult and inaccurate sections, covering information about each repetition such as tempo, accuracy, and modifications made for improvement. They were also directed to enumerate and maintain dedicated and consistent practice times. The "bright spots" intervention involved research of a given piece to foster a greater connection and emotional attachment. The intervention based on

the tenets of self-confrontation required bi-weekly viewing of video-recordings of practice sessions providing a continuing medium for comparison of expectation vs. reality and self-awareness.

In all instances, the researcher used his experience to best modify and match interventions for the maximum positive effect. Tracking sheets were created for each student (Appendix F) that allowed them to organize the interventions and see progress over time. Each participant received an e-mail from the researcher clearly restating the agreed upon interventions, including any applicable tracking sheets, and offering help and guidance with implementation as needed throughout the study.

Assessment of Effect

Participants were given one month after the design of the interventions to consistently apply them as diligently and faithfully as possible. Guided reflections were scheduled at the end of a month focusing on the participant's success in implementation of each intervention and determining what effect it had on their practice habits. Researcher observation also served as an objective measure of progress through the viewing of additional participant practice sessions, video recorded near the end of the study and watched during the guided reflection session. Predesigned questions allowed for flexibility so the participant could describe their experiences and expose emergent lines of thought. Each reflection session began with a re-statement of the interventions and inquiry about the ease of implementation and effectiveness at improving the participant's practice habits. Additional guiding questions included:

- "What has changed about your practice habits and your feelings about practicing over the course of the three studies?"
    - "What do you think has caused this change?"

    - "Do you think this change will persist and why?"
- "What was the most important change that was made and why?"
- "How have these changes affected your attitude and beliefs towards practicing?"

Data Collection and Analysis

The guided reflections were recorded, transcribed, and submitted to the process of open coding to best organize salient points from the participants' reflections, specifically related to the effectiveness of the intervention. Coding focused on recurring and meaningful groups, unified into themes that provided insight into the participant's experiences (Charmaz, 2014). A copy of the transcript file was coding in a sidebar, directly across from the original interview text. An MS Excel spreadsheet was created using each participants' pseudonym and with coded data copied under the corresponding categorical heading. For analysis, categories were compared within, then across participants looking for similarities and differences related the effectiveness of the interventions. Thirty categories were generated and applied across all participant's interviews. The most discussed and important categories were (in alphabetical order):

Accountability	Effectiveness	Motivation
Affirmation	Feedback	Organization
Attention	Focus	Patience
Automaticity	Frustration	Personalization
Behavior Change	Goals	Planning
Cognitive Dissonance	Growth	Quality
Confidence	Habit	Regret
Connection	Integration	Satisfaction
Consistency	Journey	Self-Reflection
Diligence	Mindset Change	Self-Awareness

The results are represented as narrative reflections organized by intervention based on excerpts from the transcripts that directly relate to the research questions. The participants'

voice is used to describe their experience with researcher commentary used to help unpack and elaborate successes and areas in need of improvement as described by the participant.

Lexi

Lexi's interventions were collaboratively agreed upon with the researcher in a previous interview (Brecht-Haddad, unpublished). They were designed to target perceived weaknesses and stated goals:

1. Create a connection with each of the pieces you are playing
    a. Research the piece and the background that led to its composition. An understanding of when and why the piece was composed will not only help create a deeper understanding of the piece, it may cause you to connect to, and enjoy, the piece more.
    b. Create your own story, an idea of what the piece means to you. How does it make you feel? How might that inform your practice and performance of the piece?
    c. Any other ways you can discover to emotionally connect with all of the pieces you play.
2. Always use a metronome
    a. Only play selections as fast as you can play them perfectly.
    b. Once at the appropriate tempo, play each selection perfectly 5 times in a row
    c. Once successful, increase the tempo no more than 2 bpm
    d. Repeat B and C until either your allotted time on that selection has been exceeded OR you've reached a point where going any faster would cause mistakes, OR you've reached a tempo that is about 5 – 10% faster than you'll perform it at

e. Do this for all technical passages and selections that have meter changes that are challenging
f. Always remember to put the selection into context
g. When practicing this selection the next time, start at a tempo slightly below your fastest perfect tempo achieved and repeat the preceding steps.

To assist in implementing the interventions, a tracking sheet was created to help monitor the selections she deemed most challenging and in need of improvement. She was to fill in the specific measure numbers for these selections and after mastering each selection, pick another most in need of work and add it to the spreadsheet. Lexi was also to continue recording her practice sessions and set aside ten minutes at the end of each to review the video and set goals for the next. This was to keep her focused and efficient in all subsequent sessions.

Lexi started off giving an overview of how her practice sessions went during the previous month. Although claiming the sessions were not as detailed and exact as the interventions specified, progress was made: "I got somewhere. That felt good." Sections of the music that were previously giving her problems had become much improved and a change in overall attitude about practicing seemed to permeate:

> I can play it now and it's fun. Before, I didn't know how I was going to get through some of the more challenging literature. Now, I know my journey won't be perfect but by the time that I do my senior recital, I'll feel good about it.

The discussion moved to effects of creating a connection with the music through enhanced understanding and emotional relationship. This intervention was only applied to one of the pieces but "It was a lot better". Though the research "wasn't too in-depth", some meaningful information was still gathered and applied:

> I did a little bit of reading about the Horowitz. He's Jewish and he was around during World War II. I realized this was a very happy tune written during a sad time. Since it is more jazzy, I brought out certain parts. I have little grace notes and I made maybe more emphasis on parts like that in the piece. I also have a lot of the triplets and those are very energetic. Before they were pretty dull and now they are just a little bit more upbeat because I understand what jazzy influence that he was going for.

Though the research was somewhat limited, there appeared to be meaningful musical changes. Even having some minimal background information about the composer yielded a number of insights and put the piece in a different context. When asked if this connection had any other effect on the performance of the piece:

> "I just understood it more. It felt more natural for me than to play something that I understood a little bit better**.** The jazz influence that he put into his piece was why I liked it."

In addition to musical benefits, understanding led to comfort and connection on an emotional level which could lead to increased time and greater focus devoted to the piece.

One of the biggest changes implemented was increased usage of a metronome with specific guidelines for use: "Oh my goodness. It was a pain but it helped". Though this was the most challenging change for Lexi, she seemed to follow the intervention mostly as prescribed:

> I started out super slow, almost painfully slow and then just worked it out. I started out only increasing the tempo by around two clicks. It went pretty bad if I bumped up more than that. Maybe I didn't play it five times in a row perfectly, but I at least played it three, or maybe two. I knew where I wanted it to be before I moved on and if I got frustrated I just moved on.

Her usage was mostly as prescribed and it helped her create tempo goals and benchmarks through which she structured her metronome practice. This systematic process also exposed mistakes that she was not previously aware of:

> I noticed a lot of rhythmic mistakes. I wanted to rush everything just because it was slow, but my brain was able to keep up with my fingers so then those connections started to become ingrained even when I started to increase the tempo.

Using the metronome seemed effective as an accountability tool; one that could be utilized and reacted to in real time. This process also provided enough correct reputations so that memorization was a byproduct and attention could be directed to other musical elements:

> When I look at the page now, I see the passage, but I don't see the notes. I see it and I feel it. Especially at the very beginning, I can probably do that memorized. Before I was just maybe a little bit backwards, more music before notes.

Increased repetitions also led to improved confidence and comfort:

> The last two pages are the pages that I was struggling the most with rhythm. There's a section where it alternates between triple and duple feel. I couldn't do that at all before and I'd mess it up all the time in my lesson. Last week was a breakthrough. I conquered it, I got it, because the metronome helped me a lot through that one.

Using a measured and systematic approach appears to foster improvement through a bottom-up approach starting with increased technical facility allowing a shift in focus to musical elements culminating in heightened overall comfort and enjoyment of a piece. When asked to reflect on the effects of this particular intervention, Lexi expressed some regret:

> If I used this process when I first started playing, I would be a lot further along now. Implementing it was slow, but I think it would have really been benefited me more if I would have started up that way.

Another facet of the intervention was the inclusion of a personalized tracking sheet used to identify sections that needed the most amount of attention and then monitor its progress; both tempo and quality. When asked if she used the provided sheets: "No, [laughs] I feel so guilty. I wrote it in my music." Lexi did however modify the general idea behind the sheets to more adequately suite her needs:

> I started out at less than a quarter of the original tempo, around 50 beats per minute. I wrote that in my music and then worked it up to 60 and put the parentheses around the 50 and then put 60 a little bit bolder. Then the next time I would erase the 50, put the 60 in parentheses, and replace that with whatever tempo I worked it up to in that practice session and so on.

While this addressed the need to keep track of tempo, it didn't account for quality or planning which sections needed the most attention. When asked how she kept track of that in her system: **"**I don't know, I just knew what I needed to work on the most." She used a similar method for the pieces she was preparing including for ensembles. She described how her practice habits have changed since integrating use of a metronome more frequently:

> When practicing, I wouldn't have started out with metronome at all. I just would have played and tapped my foot which is stupid [laughs] but now being smart-ish [laughs] I'm using my metronome. I'm a bit better at keeping the tempo, keeping the time.

The last prescribed intervention was the continued recording and viewing process started in a previous interview (Brecht-Haddad, unpublished). Though Lexi continued to record practice

sessions and that it was helpful, she admitted that she does not actually watch the videos. Apparently just knowing that her actions are being recorded is enough to affect some sort of change in her focus and practice behaviors. This theme continued in Lexi's overall assessment of changes in her practice habits since implementing the interventions:

> I'm a little bit more focused because there are so many other things that need to get done. I tell myself, okay, I have this much time to practice, let's go. I try my best.

Even with enhanced focus and purpose, the amount of time spent practicing has gone down but is more productive and efficient. More is getting accomplished at a higher level in less time and because of that, Lexi's attitude about practice has also improved:

> I hold myself more accountable that's for sure. Practicing is not my favorite thing but I don't hate it as much as before. It's better, more enjoyable. More gets done on my music than ever before. Frustration still gets the better of me at times and I want to chuck my instrument to the wall and quit, but I keep going to the practice room and it gets better.

This train of thought continues as she addresses increased motivation to practice in general:

> It's definitely easier. I don't even pump myself up as much to go practice because now, even though they're not always written down, I have goals in mind and know what needs to get done. It's a pretty clear mental picture of where I want to get to. More focused attention.

The combination of interventions seems to have had a profound effect not only on Lexi's practice habits but her attitude about practice in general. Having focused and clear goals and a process for achieving those goals has led to more successful and therefore more enjoyable practice sessions. That, in turn, has led to, if not increased practice time, more efficient and effective practice time.

Mike

Mike's interventions were collaboratively agreed upon in a previous interview (Brecht-Haddad, unpublished). They were designed to target perceived weaknesses and stated goals:

1. Continue to video tape and self-reflect.
2. Set practice goals right after a practice session and collect information for goals during ensemble rehearsals using the attached practice goals sheet
3. Set reminders for your regularly scheduled practice times from 11:30am – 12:30pm every day and 7pm – 8pm on Mondays, Wednesdays, and Fridays. Feel free to include extra practice as needed, but hold these set times sacred.
4. Send updates on your scale and excerpt tracking every Thursday morning.
5. The goal is to improve your standing in concert ensemble, though the larger goal is to simply make more progress in a less amount of time, practice efficiently, and audition at a higher level than the previous time

Mike's interview took place just after re-auditions had taken place. He did not know the results of the auditions at this time but used his most recent audition experience as a jumping-off point to discuss the effect of the interventions:

> I felt pretty good about it. Normal audition jitters got to me in the beginning, but as things kept going, everything worked out a lot smoother than it normally did thanks to all the practice. I felt more prepared which is weird because this audition had a much harder excerpt than the audition at the beginning of the year.

While he does not go into specifics, it seems at least that Mike felt more comfortable and prepared going in to this audition even though he perceived the audition excerpts as being more

challenging than in past auditions. His continued recordings seem to contribute to this new-found confidence:

> Recording myself has definitely helped. I felt a lot less nervous just walking in and playing for someone. I've been listening to the recordings and say, oh, well, that's what I sound like. I'm more used to that and okay with all the people listening.

As we delved into details about the implementation of the interventions, Mike describes some challenges in being consistent especially in regards to quantity of practice time as the four-week study period coincided with Thanksgiving being the end of a semester:

> It was kind of hard with all the final projects coming around. The 10 hours of practice didn't necessarily happen nearly as much as it could have. Next time around, definitely going to be enforcing those more and trying to build them into my routine in the beginning of this semester so that way, things are already set and habits are formed.

While it was unfortunate that he was not able to fully commit to the set practice times, He brings up a valid point that the integration of these new habits would likely be easier at the beginning of a school year or at least a semester when new habits are being formed anyways due to new classes and literature. Though the change was not optimal, there was still improvement:

> During the average weeks, I would hit five or six of the 10 hours. So, not the full 10, but a lot more than I normally would. Still, my practice time has almost doubled.

Aside from the increase in duration, quality improved as well due especially to continued video self-confrontation:

> Looking back at the practice videos, in an hour video, I might have gotten 15 - 20 minutes of actual work done and the rest was just kind of going through the motions. Having continued watching, work time has increased bit by bit. Now, maybe 45 minutes

> of my practice time, depending on the day, is quality work time. Yes, I'm practicing maybe twice as much, but I'm also getting twice as much work done, so just much more growth.

It is especially encouraging to see improvement on so many fronts. Not only is practice time increasing but the effectiveness of the time is as well. In addition, Mike's awareness of the improvement seems to serve as motivation for continued growth while providing feedback and accountability if he starts to regress. Enhanced awareness was also evident when addressing his quality of practice:

> Looking at my habits and realizing, yes, I thought these were good practice habits, but it turns out they weren't. This prompted me to go in and change my practice routine, actually paying attention when I practice.

Without mentioning any specific practice habits that have changed, Mike was already seeing positive effects in awareness and adjustment simply through the video self-confrontation process.

Detailed changes to practice habits started to emerge the longer we watched the video. Though not enumerated as a goal or intervention, appropriate use of a metronome was clearly a focus throughout the study. Mike had previously used the metronome as more background noise than anything else. In videos watched in a previous study (Brecht-Haddad, unpublished), he was shown practicing with the metronome on but would very rarely play in time with it. It developed into more of a hindrance than anything else. Armed with the enhanced self-awareness gained over the previous four weeks, he described some of the changes that were made:

> We know the metronome was a huge problem so I started forcing myself to stay with it. Slow and steady, get there, keep repping. I got a little impatient from time to time, but I

started noticing the progress, and that made it better so I started increasing the speed in even smaller increments. It didn't feel like much of a difference, but it slowly added up.

Like Lexi, Mike did not find the personalized tracking sheets very useful nor did he check in as stated. He modified this intervention in a similar way, choosing to keep track directly on his music:

> I never did the check ins because the sheets never really worked. I got the concept. Every time I go into practice, I need to record where I'm at, even if it goes down. Writing on the music itself was more useful. I would just take the lick, go through it a few times, starting at say, 10 clicks below where I wrote down, to make sure I have it there, and then build it back up and see if I can push the bar just a little higher the next day. I can just update it right there as I'm working. The concept was great. I just had to adapt it for myself.

While this intervention was not integrated as prescribed, the customization and personalization is potentially even more powerful since there is an increased sense of ownership. The quality component was missing but the strategy still proved worthwhile:

> This has been very effective, especially in my solo rep. It's gotten the tempo up where it needs to be. Maybe not quicker, but more stable and effective. The quality is repeatable and I can do it more often.

Though some of the interventions seemed effective there was a pervasive lack of record keeping which limited improvement. Mike did not use either the tracking or goal sheets that were provided and he soon realized that progress was stunted at times because he often could not remember what he needed to practice. This was especially true when in ensembles. A goal sheet was provided specifically to keep track of sections that needed to be practiced outside of class, but:

> I put stars next to a whole block of measures during rehearsal and hoped to remember exactly what it was I needed to work on when coming back to it during a practice session. I should have jotted down notes and explained what exactly was the problem during rehearsal. Every time it was in the moment, I would think of that, and then by the end of rehearsal, it would kind of flutter away.

Awareness of the problem was a positive step and a continuation of the enhanced mindfulness that he was developing. As was starting to become a trend in the participants, he came up with a specific and workable solution:

> Honestly, I need to start keeping a little notepad or legal pad in my practice material so I can write things down. My plan is to get just small little thing especially for my concert band folder so that during rehearsal, I can just jot down notes. The goals sheet is the one page I wish I would have had on me during rehearsals.

Mike also personalized his approach to video self-confrontation. Instead of recording all of his sessions, he would record intermittently and would passively watch them while cooking and doing other household activities:

> I've become a lot more aware of my problems and it does help me realize that the next time I go back, I need to definitely hit that up again because that's not nearly where I thought it was, or, in retrospect, that sounds a lot better than I thought it did.

It was encouraging to see Mike modifying the interventions in such a way that it was useful as the alternative would most likely have been to simply not implement these strategies at all.

Mike reiterated his increased focus and efficiency in practice sessions since adjusting his practice habits. He has streamlined the process and has "been able to just dive straight in and cut out some of the exercises I was doing just to fill time."

> Now, when I go ahead it's not just extended warm up pattern for 20 minutes, I warm up on the things that I need to hit and it's more focused.

He continued by talking about what he thought was most responsible for the improvement of his practice habits in general:

> I'm going to attribute it mostly to watching the videos. The first one was incredible in revealing all of the things that I specifically think I'm working that actually aren't being addressed, or exposing things that need more work. I've sat down revitalized my practice strategy motivated by the huge amount of growth experienced since the beginning of the study.

Being able to more clearly see growth is another positive outcome of all the interventions but specifically fostered by video self-confrontation. This increase in motivation has further led to increased enjoyment and purpose:

> I'm practicing more for myself than just to get the music down, especially, since I've started doing more efficient practice. I've come to enjoy it more. It's less just running through the motions and more me exploring, and finding out what I need to work on and getting that endorphin rush when you finally fix something that's been a struggle for a while.

He was asked to further elaborate how that "endorphin rush" manifested itself:

> It's definitely given me more motivation not to give up part way through. I stop telling myself I'll work on that later and instead think; I can keep pushing through, I feel like we might almost be there, or at least I could get closer before throwing in the towel for the day.

This highlights a continuing theme that the proposed strategies had effects far beyond what was intended. The act of deliberate practice in conjunction with the use of video self-confrontation seems to have completely revitalized the way Mike practices with enhanced practice habits and greater awareness leading to increased enjoyment and motivation. This seemed to be a self-perpetuating cycle that, at least during the four weeks of the study, had not reached its peak. When asked to explain the cause for these unplanned changes:

> It was a realization that I didn't like how I was practicing, that I've been hindering myself. It's more being upset of my past self and wanting to fix those problems. That's been driving me forward. I know I need to fix this to make up for my past mistakes.

Mike continued by identifying the most successful strategies brought about by the interventions:

> Most effective have been repetition, reflection. I also really want to throw patience on the list because a lot of my practice was impatient and just me getting frustrated. Now, I'm more willing to sit down and just hammer it out.

How did he develop more patience?

> It was forcing myself to grow more patient by constantly diving back in even though I was getting frustrated and impatient, forcing myself not to give into that. I realized exactly how badly that was affecting me and how detrimental giving into that, even one time, was because I have a real impulse control problem. If I let myself do something once, I'm much more likely to keep going back to that. Giving up on one thing in the beginning of your practice session makes me so much more likely to just give up on the next thing that comes up or the next thing.

It is interesting to note that Mike had many powerful and meaningful realizations throughout this process. What is hard to tell is how substantial an effect the interventions really had. Did going

through this process simply unlock something in him held previously dormant? Perhaps deliberate practice was the catalyst but this may be an isolated experience. Regardless, it does not seem Mike would have changed so much without intervention.

As the interview concluded, attention turned to goals for the future:

> Developing more intrinsic motivation. A lot of my motivation right now is extrinsic, just progressing through a system moving up. I need to sit down this next semester and truly find my intrinsic motivation for doing this. I want to be better for my own sake, but I feel that desire isn't as strong as it should be. It's still based on judging myself against other people instead of against myself.

While developing intrinsic motivation is worthwhile goal, achieving it can be challenging. As he thought about how that would manifest itself he had a powerful insight about what is driving him now:

> The first time we watched that video, I sat down and said; I need to be a lot better than this because I don't like what I'm seeing right now. I bet if I record myself again, I'm not going to like what I'm seeing there. I want to get to a point where I can like what I see.

As the interview concluded, Mike reflected on the changes that he had made and whether they would last:

> I like the path I'm going down, but worried because, bad habits being what they are, I'll start regressing. The focus is to keep fighting until these new habits are really ingrained.

Replacing the old habits with the new requires some sort of accountability process:

> Definitely going to keep recording but limit it to once a week or so. Make sure I can watch and say, yes, these are the habits I want to develop. Actually, paying attention to

my growth and making sure that it's positive growth. I need to develop more internal ways to recognize when things are going well and get hooked on this good feeling.

Discussion continued to turn to using emotional responses to measure progress and success. While the interventions certainly helped, they only seemed to be a gateway to an improved outlook about practicing. Mike summed up his feelings about the study in describing his attitude about practice before and after:

> Originally my feelings about practice were geared more towards just getting it done and over with. Now it's more like practice needs to happen and it's a good time. Before, there were sporadic practice sessions where I wanted to spend time with the music just to feel good again. That's become the norm. Now practice is less bashing my head into a wall and hoping it caves in before my head does and more, just kind of slow climbing over it.

Peter

Peter's interventions were collaboratively agreed upon in a previous interview (Brecht-Haddad, unpublished). They were designed to target perceived weaknesses and stated goals:

1. Focus on recital pieces, dividing time as necessary based on difficulty level to prepare for your recital in the spring and juries the second week of December.
2. Focus on the hardest parts of your ensemble music to prepare for re-auditions. The sections you determined needed the most work are included on your spreadsheet.
3. Commit to consistently using a metronome as you practice, only playing things as fast as you can play them perfectly or near perfectly, and gradually speeding up to build accurate muscle memory.

4. Lastly, set up 6 hours of practice a week and keep those times sacred. Treat them like classes you aren't allowed to skip. The practice times you agreed upon are as follows:
    a. M, W, F from 9:30am – 10:30am
    b. T from 8:30am – 9:30am
    c. Th from 10:30am – 11:30am
    d. Sun from 9:30am – 10:30am

In addition, continue to digitally record practice sessions and set aside 10 minutes at the end of each practice session to review and set goals for your next session. Keep a practice goals sheet in ensembles to write down targeted practice goals. A practice goals sheet has been attached in addition to a spreadsheet you can modify and use to keep track of your progress.

The interview started with discussion of a recent audition: "I think it was the best audition I've had at K-state. It was good personally because I felt really prepared". Peter contributed his success in large part due to knowing the pieces better than usual and feeling comfortable with all of the excerpts. The interventions played a large role in his preparation, forcing a greater level of knowledge of the piece through increased repetitions and more consistent exposure.

Peter started by discussing the effect the interventions had on increasing the consistency of practice sessions:

> It went very well actually. The first change I noticed was getting in the practice room more regularly and trying to make sure that I block off those times more efficiently. That went really well. When I first came to college, I was much, much better about that. I would practice every single day. Then since I stopped doing that, I didn't see as much improvement in my practicing, obviously. Just in the past couple of weeks that I've been

> really implementing and working on this. I've gotten better significantly quicker. I was surprised but also not surprised at how that works. I knew it would get me better but to see results that quickly, that was a nice surprise.

He was able to maintain almost all of the blocked off practice times except for some challenges on Sundays due to the unpredictability of his work schedule. Consistency was even achieved over the Thanksgiving holiday. Peter had more success in implementing this change than did the other participants. When how he was able to so faithfully stick to the schedule:

> The time period that we were working on this was helpful because I was getting ready for juries, concerts and my recital next semester. I'm also at the point in my college career where I'm starting to really feel the pressure to be a better musician by the time I get out of here. Interest and motivation has gone up a little bit just by wanting to be a better player by the time I leave.

As all of the participants were at the same point in their degree program, it was interesting that what motivated Peter, did not motivate the others. The lack of time, especially over the holiday break, and the unique challenges the end of the semester can bring, final projects, concerts, juries, etc., was one of the main factors pushing Peter to practice more, not less. He said he used to schedule his practice time but not as specifically as prescribed in the intervention:

> There would be days where I knew a practice room would be open later so I would plan to go a different time. That time would pass and I would think to myself, darn, I missed it. I would have chunks of time throughout my day where I knew I could get practicing in, but picking one of them and sticking to that was more helpful than having a couple to choose from.

Improvement was also evident in the quality of practice:

> When I implemented some of the other strategies like using the metronome, slowing down stuff to really get the muscle memory down. I found that because I practiced more often, I didn't feel the stress that I had before of making sure I got everything down right away in the practice room.

This is a unique observation. Though there was less available time in his schedule overall, consistency in the practice room increased which led to a reduction in stress given additional opportunities address all of his music. He continued to discuss new perceptions about his practice sessions:

> I feel like they were less productive short-term, but long-term, they paid off more. I used to cram for my lesson on the day or two before and while my lesson would go well, the effects wouldn't last more than a few days. Practicing more allowed me to progress in some areas a little bit more slowly but it pay off in the long-term.

This finding aligns with studies showing that practicing in intervals over a longer period of time is more effective for retention than trying to cram it all into one session (Sousa, 2006). Peter did not use the tracking sheets in part because he "wasn't a fan":

> It was just another thing for me to lose and keep track of. I'm bad with keeping things organized. I would write on my music instead. I would put a star on the sheets I needed to work on, then I would put a goal tempo mark for that section and then once that got better, I'd erase it and repeat the process it until I got to the target tempo. For tempo, I erased the previous ones once I felt like I accomplished it, then put the next goal down.

Peter customized the process and made it his own. Like the other participants, effective metronome usage was an issue and so strategies for improvement were included in Peter's interventions:

> More often than not, I use it to work out technical passages, so I set it at a tempo and keep repping that until I get the passage down. One of my recital pieces has a lot of tempo changes. I would use it to check myself to make sure I was arriving at the right tempos throughout.

Peter started using a metronome "significantly" more than before. Though initially a little skeptical and reluctant, the benefits quickly became apparent:

> It focuses you a little bit actually. I didn't expect that to happen. It's like there's a constant reminder that you should be working and practicing. It was a weird subconscious type thing. There were times where it was frustrating for sure. I would practice specific sections for a couple of days I still couldn't do it. Usually if I left it, and came back to it a day or two later, it would click in, so that was interesting to see.

Given his initial hesitation, it was interesting to see some of the unintended positive consequences of using a metronome. Using a metronome as a reminder, a subconscious cue to keep working, may not be a universally successful approach, but as it was throughout the course of the study, it was the customization of the interventions that seem to be most meaningful to the participants. When asked how it would factor in to his practice in the future:

> I will definitely use it more frequently. I'll probably continue using most of the strategies that I used for the study. Just keeping it on to keep the tempo in my head until the performance time comes around, and then using it for more technical passages to keep my fingers in time and then work it back up.

Peter regarded the use of the metronome the most effective of the interventions. He attributed having a clearer understanding of how to integrate it while practicing producing the most notable change.

> It's hard to use it until you understand how. Understanding it conceptually and doing it are two very different things. Bringing in the concept of knowing how to use a metronome into actually doing it made me understand why people preach so much about using it. You hear about it all the time because it works. I was surprised at how much it actually worked and now I feel like an idiot because I spent my entire time in college thinking I was using it correctly even though I wasn't. I never really thought about how much it had helped until just this past week when I was playing through my solo. I recorded it and thought, wow, that was really awesome. I still have the recording on my phone because I liked it so much.

This is another example of how a simple shift in understanding can have a massive effect on attitude. Peter started out as ambivalent about using a metronome while practicing and ended up crediting it with helping produce some of his best playing. Seeing as everyone who participated in the study needed some guidance on how best to utilize a metronome, it can be assumed that this may be a pervasive problem, certainly for college music education students, and perhaps with others.

Continued use of video self-confrontation was not as useful to Peter. He ended up modifying the concept and only audio recording portions of his practice: "I would record a chunk that I worked on a lot that day and just see where I was at". Sometimes it was utilized to listen for mistakes but ultimately the recordings were "reaffirming everything that I've been working on". Asked if there was anything that he heard on the recordings he wanted to address:

> Yes, plenty. I would be listening to it and then follow along in my music, and then I would circle it or put a star or something next to it. When I heard something not quite

> right, I would note to go back to it next time I practice. It just ended up being what worked for me.

Peter ended up identifying video self-confrontation as the least effective of the interventions:

> Video recording wasn't for me. I could definitely see how it could be useful, but I prefer the audio recording simply because it's easier. I feel the idea behind is about the same. I don't like watching myself on video. My preference is to listen because when listening, I have an idea of what's happening physically. There's no need to watch it. I know how to play my instrument well enough where if I hear something, I know what caused the sound. I can diagnose what's going on aurally.

Though not used as prescribed, the core purpose of using recordings for accountability and keeping track of progress was retained with the modified method. Perhaps if the video recording process was made easier it would be utilized as intended.

Practicing has never really been enjoyable for Peter. It has always been more of a chore than anything else. Though he still felt that way after the study, his mindset and purpose for practicing changed:

> My attitude towards practicing is much more positive than before. I'm motivated to practice more because I'm starting to sound better. It's mostly intrinsic, just wanting to ensure I keep to my schedule to eventually achieve my goals. A lot of that was just making myself get my butt to the practice room. I think the reason people don't enjoy is because they're not practicing right. Practicing more correctly makes it more fun,

These changes extend beyond just his practice habits:

> I've also found that it makes me want to structure things outside of practicing a little bit more and make my time more regimented than it used to be. I think it's a combination of

> goal-based things and seeing the positive results thinking; that worked. Maybe now I can practice more and get another part up to that sounds as good as the other part. It's a combination of achieving those goals and using that motivation to continue and achieve another goal after that. It's fun to sound good.

These powerful realizations show how powerful a change in perspective can be made in a relatively short period of time. Being able to see continued growth provides constant motivation and when progress slows or stops, it is immediately noticed allowing adjustments to be made. Peters goals are more specific and short-term than the others but that constant opportunity for improvement seems feed on itself and fuel continually greater achievements. Making sure the changes last is important. Peter believes that structure is the key to ensuring lasting effects.

> I have found that if I have a schedule, I'm more likely to stick to it. One way to hold myself accountable was to have either a checklist of things I have to do throughout the day, or use my calendar or something like that, and visually see all the things I have to do throughout the day so I can have a rundown of everything I got to get done.

The changes to Peter throughout the course of the study were substantial but it seemed like the interventions simply unlocked or organized pre-existing knowledge:

> I rediscovered it. I've always known I resisted organization and resisted structure. For some reason those things that don't click as well with me, but I also found that when I do implement them, it helps. It's this weird dichotomy because I don't want to do it and it's hard for me to do it, but it helps. I think I've learned how to deal with it better it just takes me more effort for me than other people. I just have to be able to put forth the effort into doing it now, be more successful at it. I'm more motivated to do that now.

As before, it comes back to enhanced awareness and structured strategies designed to improve habits leading to improved playing, greater understanding, and enhanced motivation:

> I realized how badly I needed to restructure my practicing habits. It's nice to now know that I have a good foundation going forward.

Conclusions

This study explored the experiences of three collegiate music education students and the effects of individualized interventions on their practice habits. The interventions were modeled after the tenets of three prominent theories as they relate to practice. The guiding questions will be used as a framework for concluding thoughts:

Question 1: Do collegiate music education students' feelings and habits about practice change when provided with interventions designed to improve the quality of their practice?

The participants began the study with negative feelings towards the practice process. They had all been playing their instruments for over ten years and developed habits that hindered progress towards higher levels of performance. Their development stagnated without an understanding of how to correct recurring problems. Interventions provided opportunities for different strategies and unique ways of approaching old problems.

Armed with these new strategies, the structure of their practice changed. While the amount of practice time varied, all participants reported that the time spent was more efficient than before the study. Hearing constant improvement made possible through their experiences watching their videos leading to a greater overall sense of awareness. This process greatly increased their desire and intentionality while practicing. Enhanced monitoring of their progress also fostered improved feelings towards practice and gave their sessions more focus and structure.

Throughout the study, the participant's feelings about the act of practicing changed tremendously. While some of them still do not always enjoy their practice time, they all see increased value in it and seem to have bought into a process by which to use their time more efficiently. This increase in value inspired more structured and focused practice including the integration and development of more effective habits. They all ended the study valuing the practice process considerably more than before, and while most of the participants did not end the study relishing the thought of heading to a practice room, they all appeared to at least understand the benefits a great deal more and were inspired by the possibilities of the constant improvement practice offered.

Question 2: What effect do the tenets of deliberate practice have on collegiate music education students' practice habits?

The strategies inspired by deliberate practice seemed to give the participants something clear and tangible on which to focus practice strategies. Specific interventions provided instructions that were intentionally specific in regards to how they would use a metronome so there was little room for interpretation. This meant that the participant did not have to spend extra time thinking about what to do so they could effectively integrate the strategy. This ease of use is likely the reason that enhanced and improved metronome use was the most consistently utilized and reportedly useful intervention. Conversely, the prescribed use of tracking sheets was the most frequently modified and personalized intervention.

All three students chose to adjust the tracking process in similar ways. The provided tracking sheets were designed to track tempo and quality of a given passage, selected by the student as an area of need. Though each participant had sheets specifically created for them, it was discovered that the specific design of the intervention required flexibility to fit in the

individual student conception of practice sequence and personal commitment. Students felt more comfortable tracking their progress during practice sessions directly on their music. As they became aware of inadequacies in their practice habits or performance of a piece, they devised their own interventions designed to address a perceived problem. This personalization was driven by increased awareness of their practice habits. As provided, the tracking sheets were too different from current habits and so they reverted to the most closely related strategy they felt comfortable with. The only shortfall with this personalized process was their lack of clarity in accounting for the current quality of a passage. Future use of this strategy will require increased input from the students as to how best to integrate with current practice habits and account for quality of a passage throughout the practice process.

Question 3: What effect does enhanced awareness, facilitated by video self-confrontation have on collegiate music education students' practice habits?

Video self-confrontation was the primary force behind the students' improvement evident in the study. Many, if not all of the insights that occurred during the study were directly related to the viewing of their recordings. Being aware of what was actually happening while practicing was truly eye opening for each of the participants. Even the act of recording, without the intent to watch, was a powerful force for change. Though Peter did not choose to fully implement this intervention, increased accountability was created through audio recording demonstrating that either audio or video recording resulted in enhanced awareness, thus a foundation for student improvement decisions.

Seeing or hearing what was occurring during their practice sessions provided a foundation upon which students can make decisions. When students viewed themselves from an outward perspective, issues of improvement needs become evident, stoked by their desire to

improve. Hearing the improvement, no matter how incremental, kept the participants driven to continue practicing. Small improvements led to large changes in practice habits. By the end of the study, students were designing their own interventions to best address the problems they were seeing in the videos. This showed that the students in this study who were near the end of their degree program were capable of assessing, critiquing, and modifying their own behaviors and habits to optimize their results. Practice strategies must be developed and adjusted constantly to best address the deficiencies viewed on the video. This will likely need to be done with the guidance of teacher until the student is knowledgeable and comfortable enough to develop strategies on their own.

Slow and steady progress is the key and using video self-confrontation to monitor that progress appears to be an effective strategy to employ. This gives students a constant monitoring process rather than having to wait for feedback from an ensemble director or applied teacher. Often, they already had the necessary knowledge and skills to address their practice issues but were not aware of them. Awareness combined with strategies to address the problems noticed in the videos provided a large boost to effectiveness and progress during practice. When students were able to hear themselves progress more quickly and have the tools to fix most of their own problems, they were increasingly inspired to practice.

Question 4: What effect does the awareness and usage of bright spots have on collegiate music education students' practice habits?

Bright spots manifested themselves throughout the study. The original intervention, having one of the participants analyze their own performance quality in comparison to their analysis of the piece studied with the ultimate goal of connecting more deeply and expressively to their discoveries from a detailed analysis of the piece rehearsed, was marginally successful at

best. This strategy was only utilized by one of the participants and ended up only being applied to one of her pieces. Though she reported an improved understanding of the piece, which led to enhanced awareness that was used as a foundation for decisions made during practice and her feelings about rehearsing the piece, it did not seem as though it had an extremely meaningful impact.

Positive feelings prompted not only a continuation, but also the personalization of the process. The benefit of bright spots is using successful outcomes as a template to positively effect unsuccessful areas. Participants in this study were inspired to continue practicing and strive for continual improvement as a result of confronting their recorded practice habits. Since students often were aware of their problems but unsure of how to fix them, giving them tools to help bridge the gap between their cognitive dissonance increased their drive to practice. When interventions were offered, students required flexibility to adjust the structure to fit their practice sequence. One participant described his success in using the interventions during practice sessions and considered conceptually transferring these strategies beyond the practice room. The intent of bright spots include transferring knowledge from one successful area to improve another. As far as strategies, this could simply mean fostering an environment or creating a process in which students can be successful and then helping students apply that type of thinking to other areas of their lives, academic or otherwise.

Possibilities for Future Research

While the goal of this study was to identify the results of using interventions to increase the quality of practice, it appears the collective impact of the interventions was far greater than their originally limited focus. Small changes in practice habits prompted other improvements to the participants' strategies and feelings about practice. The structured ways of practicing that

were presented ultimately fostered larger effects allowing the participants to become more self-aware and ultimately gaining more control of their progress. These changes combined to drastically alter the attitudes and outlooks of the participants.

Progress while practicing, made possible by the interventions, proved to be strong incentive for continued, and even increased time spent practicing. Becoming aware of deficiencies through video self-confrontation was crucial to the process. As exposed in this study, the participants often had an incorrect perception of what is actually occurring while they practice. The visceral act of watching themselves was the primary spark that spurned the impetus to make a change. Once the participants realized that there were a myriad of areas in need of improvement that were previously unaware of, they were willing to put the extra effort forth to bridge the gap between perception and reality.

Individually, these interventions may not have been as effective. The participants made it clear that before watching video of themselves, they knew there were habits in need of correction, but they often did not know how to approach improvement. Integrating practice habits based on the tenets of deliberate practice by itself may not spur continued practice and innovation if one is not able to see the improvement. Though recording every single practice may not be necessary, it must happen at regular enough intervals so that improvement can be heard and adjustments can be made. Even Peter, who chose to audio-recorded himself instead of using video, was able to take advantage of this method of accountability. That feedback, along with strategies specifically targeting certain areas of improvement, seem key to the process.

Customization of the interventions seemed meaningful to the participants. Though the prescribed interventions were specific and detailed in their implementation, none of the students integrated them 100% as they were instructed. This is an appropriate and important aspect of

implementing new practice habits. The participants needed flexibility to adjust the process to fit their practice structure and current understandings. That being the case, the students personalization's of interventions still supported and addressed the deficiencies they were developed for.

These powerful realizations show how a change in perspective can be made in a relatively short period of time. Being able to see continued growth provided constant motivation and when progress slows or stops, it is immediately noticed allowing adjustments to be made. Given the results of this study, directions for future research include:

1. Design and implementation of interventions addressing other musical elements such as tone and intonation, and its effectiveness
2. Exploring the effect of the interventions separately to discover the difference in impact when not combined
3. Design and implementation of more sophisticated strategies exploring the effects of bright spots motivating practice
4. Replication of the study involving different age groups, skill levels, and instrument groups.
5. Replication of the study involving a larger and more diverse population.

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Chapter 6 – Conclusions

Summary of the Study

I was motivated to undertake this research because of my interest in improving the quality of practice through enhanced practice techniques. Time is often a mismanaged resource and college music education students are usually required to take more classes and spend more time outside of class working towards their degree than the average student. When faced with a myriad of responsibilities and deadlines, practice time can often be the first thing to suffer. Discovering factors that lead to their current practice habits and coming up with techniques that can help make practice time more efficient could lead to more effective practice in less time, freeing the student up to address other obligations. Developing a process by which teachers and students can identify and address deficiencies in practice opens possibilities to facilitate power and autonomy during the practice process to all musicians.

The purpose of this research was to discover influences that guide practice habits of collegiate instrumental music students, explore student self-discovery of practice needs, and create strategies that can be used to improve the quality of students' individual music practice. Three studies were completed, each addressing a different aspect of practice habits. Each study was presented as a chapter sequenced to address the global phenomenon of practice. These were:

1. *Discovery: The Effect of Background Factors on Practice Habits of Collegiate Music Education Students*. What beliefs support the practice habits of collegiate music education students?
2. *Video Self-Confrontation: Exposing the Gap Between Perception and Reality in Practice Behaviors of Collegiate Music Education Students*. How does increased awareness of

practice habits, through video self-confrontation, affect collegiate music education students' beliefs about practice?'

3. *Interventions Designed to Improve the Quality of Practice in Collegiate Music Education Students*. Do collegiate music education students' feelings and habits about practice change when provided with interventions designed to improve the quality of their practice?

As conclusions were presented individually with each study, they will not be repeated here. Instead, a synthesis of the results and conclusions from all the studies will be presented.

Discoveries

Teachers are crucial to the development of beliefs and strategies that improve practice habits. The students in this study were not introduced to effective practice strategies at a young age. It seems that put them at a disadvantage when entering college. Providing students with effective practice strategies and instilling good practice habits at a young age seems crucial to future success. These techniques and the importance of practice should be presented to students from the time they start playing throughout their entire musical education. Providing instruction on good practice habits and the purpose of practicing is frequently a neglected part of the music curriculum.

Presenting techniques and strategies designed to improve practice is not enough. Constant monitoring and adjustment is necessary. The participants in these studies often limited their own practice time because they often got frustrated with lack of progress. Part of this frustration can be attributed to not having the understanding or tools to address their recurrent problems. If they did not know how to fix something, or if what they were trying was unsuccessful, the students simply moved on or ended their practice session right then. If they

continued, they did so in a more agitated emotional state, one that was likely not conducive to continued success and progress. Another possibility of frustration while practicing is that they were not aware of the progress that was being made because it was occurring too slowly and they did not have a way to measure and be aware of it.

Slow and steady progress is the key and using video self-confrontation to monitor that progress is an effective strategy to employ. This gives students a constant monitoring process rather than having to wait for feedback from an ensemble director or applied teacher. Often, they already had the necessary knowledge and skills to address their practice issues but were not aware of them. Awareness combined with strategies to address the problems noticed in the videos provided a large boost to effectiveness and progress during practice. When students were able to hear themselves progress more quickly and have the tools to fix most of their own problems, they were increasingly inspired to practice.

The participants' applied teacher was asked the following questions about their perceived change in each of the students. The questions were asked five months after the study began and three months after it ended:

1. Have you noticed changes in preparation and performance for lessons? Describe.
2. Have you noticed changes in performance level during performances outside of lessons? Describe.
3. Have you noticed changes in practice habits and/or behaviors, either vocalized by the student or as evident in lessons or performances? Describe.
4. What are the most substantive changes you have noticed in each student as is relates to preparation and performance on their instrument?
5. What do you attribute the above changes to? Do you think they will persist?

6. Currently, what most needs to improve about each student's practice habits?

A summary of the applied teacher's responses is below:

Lexi

Lexi's preparation has been inconsistent over the course of the three studies but has still steadily improved. She has always possessed strong skills in producing beautiful tone quality, but has always been somewhat average in the area of finger technique. She was challenged in the fall with an extremely technically oriented solo to prepare for juries. This seemed to produce a positive effect, however, constant health and family problems have limited her progress.

Lexi has made significant technical improvements and is a more confident player. That is, at least in part, attributed to the skills and systematic approach to practice that she has started to develop. It is clear that her practice habits have become more organized and clearly defined. She will continue to be successful if able to find a way to work through the personal roadblocks that are currently interfering with her career development.

Mike

After years of marginal performance, Mike has significantly stepped up his game in being better prepared for his weekly lessons. He has also more reliable in all of his performing ensembles and seems much more serious about improving in all aspects this year. He is much more consistent at his weekly lessons, which has clearly reflected a more successful and systematic approach to practicing. This was definitely lacking in the past.

Mike has been lagging behind in technical facility ever since he came to college due to a lack of private instruction. Last spring, he did not pass into the next level of applied lessons and was motivated to improve. During his fall jury his fundamental technique was more focused and he did end up moving on to the next level of instruction. Though I believe the changes will

persist his years of subpar performance and preparation may continue to limit him. He will need to work to get past this. If he does continue this fall's trend of improvement, he should have a positive experience in the remainder of his career here.

Peter

Peter has evolved into one of the most motivated and well-prepared students in my studio. He is ready to go every week, and eagerly implements all of my suggestions in addition to being a strong leader. Peter has developed a more systematic and efficient method of practicing. He played a very difficult program quite well on his recent solo recital. I think it really was the change of pace that benefitted Peter the most. He has really shifted into a high gear since October and I do think the changes will persist. Peter is really on the right track. He just needs to continue what he's doing, and I hope it carries through to his students when he begins his teaching career.

Participant Summary

It is hard to say what effects the studies have had and how much of their improvement is related to the skills and awareness brought about by the study. It is interesting to note that, aside from personal problems, all participants have made progress in developing more productive practice strategies and habits as evidenced by improved performance. Peter, who started in the lowest ensemble, appears to have progressed the most over the course of the study and beyond. It could be because, out of the three, he had the most areas in need of improvement. By the end of the third study, after a re-audition of all the concert band ensembles, Peter ended up moving from the third ensemble to the second. Lexi and Mike both moved up a chair in their ensembles as well.

Summary of Effective Strategies

Based off the results of the three studies, the following is a summary of the most effective strategies explaining improvement practice quality:

1. Increased self-awareness is critical both to identifying areas in need of improvement and to monitor progress. Digitally recording and viewing practice sessions must happen at regular intervals.
2. Practice strategies must be developed and adjusted constantly to best address the deficiencies viewed on video. This will likely need to be done with the guidance of teacher until the student is knowledgeable and comfortable enough to develop strategies on their own.
3. Usage of a metronome is a crucial accountability tool that should be integrated into all practice sessions. Students should slow down challenging passages to tempos that allow them to perform the except at a near perfect level of technical proficiency before gradually increasing the tempo. This process should be repeated until the desired tempo is achieved.
4. The above strategies, when combined successfully, will lead to more productive and efficient practice sessions and intrinsically fueled motivation to practice.

Directions for Future Research

The three studies involved musicians of the same age, with the same level of experience, at the same school, playing the same instrument. Future research should focus on a more diverse group of participants. Education about how to practice should be integrated into our curriculum and taught daily. Students should be encouraged to monitor themselves so they are able make adjustments and create strategies to address deficiencies on their own.

Additional studies could, first and foremost, could assess the effect when applying the proposed theory in a variety of setting and with a wide range of students. The theory could also be applied with modified and additional practice strategies. Another direction of research could assess the effect of improved practice strategies on the enjoyment of students while practicing and performing. Integration of these techniques and ideas into the classroom is another important step starting with creating teacher techniques that could be used to discover and personalize instruction and development of practice habits for their students. Lastly, curriculum should be developed with the goal of integrating the instruction of effective practice skills in all levels of music instruction.

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Appendix A - Selection Survey

Practice Study - Prospective Participant Survey

Please fill this out in its entirety if interested in being considered for the practice study

*** Required**

First Name *

Last Name *

What K-State concert ensemble are you currently in? *

Concert Band
Wind Symphony
Wind Ensemble

Are you a music major? *

Yes
No

Do you currently study privately with a K-State applied faculty member? *

Yes
No

Primary Instrument *

Flute/Piccolo
Oboe
Clarinet
Saxophone
Bassoon
French Horn
Trumpet
Trombone
Euphonium
Tuba
Percussion
String Bass
Piano

Year in college *

Freshman
Sophomore
Junior
Senior
5th Year Senior
6th Year Senior
Graduate Student

Year in K-State Concert Bands *

1
2
3
4
5
6

Years of Private Instruction on Primary Instrument *

1
2
3
4
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Appendix B - Selection E-mail

Hello Wind Ensemble,

Please read all the way through the following email. I greatly appreciate you taking the time to consider participating!

I am inviting you all to potentially participate in a research study I am conducting as the subject of my dissertation. The study focuses on quality of practice.

<u>If selected, your involvement would be as follows:</u>
- (3) Hour long interviews / video self-confrontation sessions

- The recording of approximately two weeks of your individual practice sessions. This will be set up through KSIS and will only require that you have an electronic device that can access KSIS and digitally record video and audio. All recordings will be securely stored through KSIS and will require no additional work from the participant.

- At the conclusion of the study, you will be given all information and documents created from your participation to read through and check for accuracy.

The benefit to each participant will be a potential increased awareness and improvement of practice habits and behaviors. Through this research I also hope to add to and improve the body of work in this field.

If you agree to participate and are selected, your identity will be protected and no identifying items will be included at any point during the study, up to and including the final dissertation. You will be allowed to end your involvement at any time.

<u>The timeline for the study is as follows:</u>
- Notification of acceptance as a participant will be sent out on Friday, October 14th at 11:30pm. Once notified, recording of individual practice sessions should immediately begin.
Week of October 17th - Initial Interview
Week of October 31st - Second Interview
Week of November 14th - Final Interview
December to January - Member Checking

Please fill out the survey as soon as you are able at the link below if you would like to be considered. I will close the survey on October 14th, 2016 at 10am. Thank you very much!

Appendix C - Informed Consent Form

Kansas State University

Informed Consent Form

WAIVER OF INFORMED CONSENT: *There are limited instances where the requirement for a formal informed consent document may be waived or altered by the IRB.*

45 CFR 46 states that "An IRB may waive the requirement for the investigator to obtain a signed consent form for some or all subjects if it finds either:

1) That the only record linking the subject and the research would be the consent document and the principal risk would be potential harm resulting from a breach of confidentiality. Each subject will be asked whether the subject wants documentation linking the subject with the research, and the subject's wishes will govern; or

2) That the research presents no more than minimal risk of harm to subjects and involves no procedures for which written consent is normally required outside of the research context."

PROJECT TITLE: Improving Quality of Instrumental Music Practice

APPROVAL DATE OF PROJECT: September, 2016 **EXPIRATION DATE OF PROJECT:** December, 2016

PRINCIPAL INVESTIGATOR: Frederick Burrack

CO-INVESTIGATOR(S): Daniel Brecht-Haddad

CONTACT NAME AND PHONE FOR ANY PROBLEMS/QUESTIONS:
(206) 427-3874, haddad@ksu.edu

IRB CHAIR CONTACT/PHONE INFORMATION*:*

- Rick Scheidt, Chair, Committee on Research Involving Human Subjects, 203 Fairchild Hall, Kansas State University, Manhattan, KS 66506, (785) 532-3224.

- Cheryl Doerr, Associate Vice President for Research Compliance, 203 Fairchild Hall, Kansas State University, Manhattan, KS 66506, (785) 532-3224

SPONSOR OF PROJECT: Frederick Burrack

PURPOSE OF THE RESEARCH: To discover how instrumental music students describe their experiences, behaviors, and beliefs about practice and possibly create a theory that can be applied beyond the study.

PROCEDURES OR METHODS TO BE USED:
If you agree to participate in this study, you will be interviewed and asked to digitally video record your individual practice sessions and to review analyses of the data gathered during the interviews in addition to implementing intervention strategies in the hopes of helping improve your practice habits. This study

will take eight weeks during which you will be interviewed three times in addition to a post-study interview for member checking.

LENGTH OF STUDY: This study will last 8 weeks.

RISKS OR DISCOMFORTS ANTICIPATED: There are no known or anticipated risks or discomforts anticipated for the participant in this study.

BENEFITS ANTICIPATED: The benefits of the study will include possible improvement of practice habits through reflection and modification based on information uncovered throughout. In addition, information you provide may be beneficial will add to the existing literature with possible benefit for others in the future.

EXTENT OF CONFIDENTIALITY:
This study is confidential. Your name will not be used. The records of this study will be kept private. No identifiers linking you to this study will be included in any sort of report that might be published unless you specifically request otherwise. Research records will be stored securely and only the researcher, Daniel Brecht-Haddad, will have access to the records.

If you choose to participate in this study, you will be video and audio recorded. Any recordings will be stored securely and only Daniel Brecht-Haddad will have access to the recordings. Any recordings will be kept for three years and then erased.

TERMS OF PARTICIPATION: I understand this project is research and that my participation is completely voluntary. I also understand that if I decide to participate in this study, I may withdraw my consent at any time, and stop participating at any time without explanation, penalty, or loss of benefits, or academic standing to which I may otherwise be entitled.

I verify that my signature below indicates that I have read and understand this consent form, and willingly agree to participate in this study under the terms described, and that my signature acknowledges that I have received a signed and dated copy of this consent form.

(Remember that it is a requirement for the P.I. to maintain a signed and dated copy of the same consent form signed and kept by the participant)

Participant Name: _____

Participant Signature: _____ **Date** _____

Witness to Signature: (project staff) _____ **Date** _____

Appendix D - Intervention Descriptions

- Deliberate Practice
    - A log detailing specific short-term goals and plans for achieving those goals
    - A log breaking down difficult and inaccurate sections and covering information about each repetition such as tempo, accuracy, and modifications made for improvement
    - Enumerating and setting aside dedicated and consistent practice times
- Bright Spots
    - Research of a given piece to foster a greater connection and emotional attachment
- Video-self-confrontation
    - Video-recording and self-confrontation providing a continuing medium for comparison of expectation vs. reality and self-awareness.

Appendix E - Coding Example

Lexi: So now I feel comfortable enough to put on a metronome. I don't put on a metronome until I have some of the fingerings down. I don't know why I do that. I feel like the metronome freaks me out so I don't focus on the fingers, I focus on the rhythm. So I gotta get the fingers down before I get the rhythm sometimes, I don't know.

36. PH - comfortable enough to put on a metronome
37. PH - don't put a metronome on until I have some of the fingerings down
38. PB - the metronome freaks me out so I don't focus on the fingers, I focus on the rhythm
39. STRA - Gotta get the fingers down

Code Abbreviations
PH – Practice Habits
PB – Practice Block
STRA – Strategies
STRU – Struggle

Analysis Grid

PARTICIPANT	PRACTICE BLOCK	PRACTICE HABITS	STRATEGIES	STRUGGLE
LEXI	I gotta leave, I'm getting too frustrated	I'm just going to play through it, no metronome, and see what happens	I have to sing because I can't figure it out	I would get too frustrated
LEXI	the metronome freaks me out so I don't focus on the fingers, I focus on the rhythm	just play whatever comes out	Then I listened to it	It's awful
LEXI	I was getting tired though	get a feel for it	Gotta get the fingers down before I get the rhythm	figure out what stinkin' tempo I can play it at
LEXI	spots in the music where I freak out	Trying to get a feel for it	Very much under tempo	Awful

Appendix F - Sample Tracking Sheet

Excerpt Tracking Sheet

Use this sheet to track your progress. Enter the excerpt range (measures), highest tempo aachieved (perfectly), the date you last worked on it, a rating from 1 - 10, and any comments that will be helpful in the next practice session.

SELECTION	TEMPO	DATE	RATING	COMMENTS