A COMPARISON OF TEACHER-GUIDED INSTRUCTION AND SELF-GUIDED STUDENT PRACTICE STRATEGIES

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ABSTRACT

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It is commonly understood that the foundation of private instrumental studies at the collegiate level is one, hour-long, teacher-guided private lesson per week followed by self-guided student practice until the next lesson. This model allows a teacher to tailor instruction to fit a student's particular needs, however, because the majority of a student's time with an instrument is during self-guided practice, there are unique challenges that must be addressed. Students must recognize key concepts from a private lesson, know how to produce desired results technically, devise a strategy that will solidify key concepts in familiar and novel domains, and demonstrate their success in the next week's lesson. However, the processes involved in skill acquisition transcend domain and have been studied both in musical and non-musical contexts.

In this research I will observe and compare the behaviors of students during private lessons with students' behaviors during subsequent self-guided practice sessions. The purpose of this study is to:

1. Determine if there is a measureable difference in student behavior during a private lesson and during a self-guided practice session.
2. Identify factors that mediate differences, if present.
3. Determine if accumulated lessons affect self-guided student practice.
4. Provide insight as to why different behaviors occur by comparing the findings from each student.

A series of three private lessons and three subsequent student practice sessions from three students were video taped and analyzed, and after all video data were collected, an exit interview was conducted with each student

participant. Descriptive statistics from each private lesson were compared with descriptive statistics from each self-guided practice session, and responses from the student exit interview were used to add additional insight to this comparison.

It was found that there are measureable differences between student behavior during a private lesson and during a self-guided practice session. The results indicated that specific performance directives during a private lesson translate into self-guided student practice behaviors that are more focused and productive. Further research is needed to explore the effect of varying types of feedback during a private lesson on self-guided student practice. The results do not suggest that accumulated lessons affect self-guided student practice; however, it is likely that observations over a longer period of time would affect that result. The data show that further research is needed to provide insight as to why different behaviors occur among students, but the data suggests that individual differences between students is the primary cause of differing behaviors.

This document is dedicated to:

My family and friends, whom I consider my family, thank you for your encouragement and support.

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CHAPTER I. INTRODUCTION

It is commonly understood that the foundation of private instrumental studies at the collegiate level is one, hour-long, teacher-guided private lesson per week followed by self-guided student practice until the next lesson. This model allows a teacher to tailor instruction to fit a student's particular needs, however, because the majority of a student's time with an instrument is during self-guided practice, there are unique challenges that must be addressed. The primary way a teacher has to assess what students do during self-guided practice is through the level of performance that they demonstrate in private lessons.[1] Teachers, of course, also have the option of discussing their students' practice strategies, but students' perception of their self-guided practice sessions often drift from describing their goals to self-criticism.[2] Students must recognize key concepts from a private lesson, know how to produce the desired results technically, devise a strategy that will solidify the key concepts in familiar and novel domains, and demonstrate their success in the next week's lesson.[3] However, the processes involved in skill acquisition transcend domain and have been studied both in musical and non-musical contexts.

Interactions between a student and a teacher during private lessons have been studied[4] as have practice strategies used by students as they engage in self-guided

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1. Sheila J. Scott, "Rethinking the Roles of Assessment in Music Education," *Music Educators Journal* 98, no. 3 (2012), 31-35, Academic Search Complete, EBSCOhost (accessed February 17, 2013).

2. Roseanne Rosenthal, Manju Durairaj, and Joyce Magann, "Musicians' Descriptions of Their

2. Roseanne Rosenthal, Manju Durairaj, and Joyce Magann, "Musicians' Descriptions of Their Expressive Musical Practice," *Bulletin of the Council for Research in Music Education,* 181 (2009), 46.

3. Susan Ali, "Understanding Our Students' Self-Regulation During Practice: Verbal Protocol as a Tool," *Journal of Singing* 66, No. 5 (2010), 530.

4. Robert A. Duke and Amy L. Simmons, "The Nature of Expertise: Narrative Descriptions of 19 Common Elements Observed in the Lessons of Three Renowned Artist-Teachers," *Bulletin of the Council for Research in Music Education*, no. 170 (2006), 7-20; L.S. Vygotsky, *Mind in Society; The Development of Higher Psychological Processes,* ed. Michael Cole, Vera John-Steiner, Sylvia Scribner, Ellen Souberman (Cambridge: Harvard University Press, 1978); Robert A. Duke, "Teacher and Student Behavior in Suzuki String Lessons: Results from the International Research Symposium on Talent Education," *Journal of Research in Music Education,* 47. No.4 (1999), 293-307; Donald L. Hamann et al., "Factors Affecting

practice[5] and research that compared artist-teachers' practicing with their students.[6] However, the similarities, differences, and changes between student behavior in a teacher-guided lesson and student behavior in self-guided practice has not been widely studied. It is important to first study each facet of learning an instrument individually, and then compare the relationship between private lessons and self-guided student practice sessions, which could provide a richer understanding of how students internalize the concepts and strategies used by a teacher during private lessons. Because the time a teacher has to influence student thinking is limited, maximal efficiency during private lessons is essential.

This research will observe and compare behaviors between an artist-teacher and three students during private lessons, with self-guided student practice sessions. Through comparative analysis, this study seeks to:

1. Determine if there is a measureable difference in student behavior during a private lesson and during a self-guided practice session.
2. Identify factors that mediate differences, if present.
3. Determine if accumulated lessons affect self-guided student practice.
4. Provide insight as to why different behaviors occur by comparing the findings from each student.

University Music Students' Perceptions of Lesson Quality and Teaching Effectiveness," *Journal of Research in Music Education,* 48. No. 2 (2000), 102-113;

5. Nancy H. Barry, "The Effects of Practice Strategies, Individual Differences in Cognitive Style, and Gender upon Technical Accuracy and Musicality of Student Instrumental Performance," *Psychology of Music*, 20. (1992), 112-23; E. Ashby Plant et al., "Why Study Time Does Not Predict Grade Point Average Across College Students: Implications of Deliberate Practice for Academic Performance," *Contemporary Educational Psychology*, 30 (2005), 96-116; K. Anders Ericsson, Ralf Th. Krampe, and Clemens Tesch-Römer, "The Role of Deliberate Practice in the Acquisition of Expert Performance," *Psychological Review*, 100 No. 3 (1996), 363-406; Robert A. Duke, Amy L. Simmons, and Carla Davis Cash, "It's Not How Much; It's How: Characteristics of Practice Behavior and Retention of Performance Skills," *Journal of Research in Music Education,* 56 No. 4 (2009), 310-21; Peter Miksza, "Effective Practice: An Investigation of Observed Practice Behaviors, Self-Reported Practice Habits, and the Performance Achievement of High School Wind Players." *Journal of Research in Music Education,* 55 No. 4 (2007), 359-75; Ruth Rainero, "Practicing Vocal Music Efficiently and Effectively: Applying "Deliberate Practice" to a New Piece of Music," *Journal of Singing*, 69 No. 2 (2012), 203-14; Laura A. Stambaugh, "When Repetition Isn't the Best Practice Strategy: Effects of Blocked and Random Practice Schedules," *Journal of Research in Music Education*, 58 No. 4 (2011), 368-83.

6. Lisa Maynard, "The Role of Repetition in the Practice Sessions of Artist Teachers and Their Students," *Bulletin of the Council for Research in Music Education,* 167 (2006), 61-72.

A series of three private lessons and three subsequent student practice sessions will be video taped and analyzed, and after all video data have been collected, an exit interview will be conducted with each student participant. Descriptive statistics from each private lesson will be compared with descriptive statistics from each self-guided practice session, and responses from the student exit interview will be used to add additional insight to this comparison.

Analysis of video data will begin with the private lesson videos by creating a chronological overview, which consists of identifying *rehearsal frames,* noting timings, and describing behaviors demonstrated by the teacher and student. Rehearsal frames are clearly defined by Robert Duke:

> Throughout performance instruction, teachers identify a number of specific goals that students are expected to accomplish, and it is possible to identify the time periods during which each performance goal is the focus of attention. Each of these time periods frames the instructional activities that are devoted to the accomplishment of an identifiable performance goal. I refer to these time periods as *rehearsal frames* and the performance goals as *targets.*[7]

The next step in the private lesson video analysis will consist of selecting a *target passage,*[8] which is a segment of music that is the focus of attention. The criteria for selection are: (1) the segment must be between 5 – 11 minutes in length, (2) the segment of the lesson focuses on a section of a piece that has been previously introduced, and when possible (3) the student practiced the same passage during his or her corresponding self-guided practice session. SCRIBE 4.2 will be used to record the frequency, rate per minute, duration, percentage of time, mean, and standard deviations for each selected portion from the private lessons. SCRIBE 4.2 is a

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7. Robert A. Duke, *Intelligent Music Teaching: Essays on the Core Principles of Effective Instruction* (Austin, Texas: Learning and Behavior Resources, 2005), 160.

8. Lisa Maynard, "The Role of Repetition in the Practice Sessions of Artist Teachers and Their Students," *Bulletin of the Council for Research in Music Education,* 167 (2006), 65.

computerized data analysis program that allows users to label events in live observations or in QuickTime movies, to summarize event timings, and to play back labeled events.[9]

The SCRIBE observation of each private lesson selection will focus on the following *targets*[10]: articulation, rhythm, tone quality, interpretation and breathing. Those targets were selected for two reasons; (1) the teacher frequently focused on them during private lessons and (2) they represent fundamental aspects of music that are used to determine level of performance.[11] Segments of a lesson or rehearsal, which are devoted to those targets, will be analyzed. Teacher verbalizations, student verbalizations, teacher playing, student playing, teacher performance approximations, and student performance approximations will be recorded over multiple viewings. For the purpose of this study, a *performance approximation* will include any performance of rhythms, or pitches that were not performed on the clarinet, including singing, clapping, counting, conducting, or other means of producing musical sounds or body movements.[12]

Analysis of the self-guided practice sessions will be similar to the approach taken for the private lesson analysis. A chronological overview will be created, a selection from each self-guided practice session will be chosen using the same criteria as the private lesson selection, and the selections will be observed using SCRIBE. However, the SCRIBE observation of the self-guided practice sessions will focus on the behaviors

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9. Robert A. Duke and Dale Stammen, "Scribe 4 Software," *The University of Texas at Austin: Center for Music Learning*, Accessed 11/25/2012, http://cml.music.utexas.edu/online-resources/scribe-4/description/.

10. Robert A. Duke, *Intelligent Music Teaching: Essays on the Core Principles of Effective Instruction* (Austin, Texas: Learning and Behavior Resources, 2005), 160.

11. John M. Geringer and Clifford K Madsen, "Musicians' Rating of Good versus Bad Vocal and String Performances," *Journal of Research in Music Education,* 46 No. 4 (1998), 525.

12. Elaine Colprit, "Observation and Analysis of Suzuki String Teaching," *Journal of Research in Music Education*, 48. No. 3 (2000), 210.

that the students demonstrate and will not identify targets. Because identifying targets requires knowing student intent, and because intent cannot be accurately inferred from observing behaviors alone, focusing only on student self-guided practice behaviors decreases the likelihood of identifying targets incorrectly.

The SCRIBE data for the behaviors from each lesson and each corresponding self-guided practice session will then be compared. This comparison will provide a statistical representation of how student behavior during rehearsal of the same or a similar passage of music worked on during a private lesson differed from teacher behavior during a private lesson. An exit interview, which was conducted with each student participant after all video data were collected, will provide information about each student's purpose during his or her self-guided practice sessions.

CHAPTER II. REVIEW OF LITERATURE

THE STUDENT-TEACHER CONNECTION

The connection between a teacher and a student during a private music lesson is closely related to the theory of education that Lev Vygotsky pioneered in his research of school-aged children. Vygotsky's theory is centered on the idea that a student's mental development is not simply the measurement of what a student can achieve independently, but rather a combination of measures that Vygotsky calls the zone of proximal development.

> The zone of proximal development…is the distance between the actual development level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers.[13]

The theory of the zone of proximal development is important to the student-teacher connection during a private music lesson because it assumes that the level of performance that a student can achieve with help from a teacher or more skilled peer will be higher than a student will be able to achieve when working independently. This is an important fact for a teacher to take into account as he assesses the performance level of his students and assigns appropriate musical material.

Integral to the theory of the zone of proximal development is teacher modeling and student imitation as a primary means of instruction. In private music lessons, teachers commonly use demonstration as a technique to transmit knowledge to their students.[14] Before Vygotsky's research, imitative abilities were not used to measure the mental development of a student and instead focused only on independent student

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13. L.S. Vygotsky, *Mind in Society; The Development of Higher Psychological Processes,* ed. Michael Cole, Vera John-Steiner, Sylvia Scribner, Ellen Souberman (Cambridge: Harvard University Press, 1978), 86.

14. Robert A. Duke and Amy L. Simmons, "The Nature of Expertise: Narrative Descriptions of 19 Common Elements Observed in the Lessons of Three Renowned Artist-Teachers," *Bulletin of the Council for Research in Music Education*, no. 170 (2006), 13.

activities. The problem with excluding a student's imitative ability from consideration of developmental level is, that regardless of external help, a student can only perform within his development level.[15] When a teacher uses modeling and student imitation as a teaching technique, he has a nuanced way to assess the developmental level of his students. When a student is able to imitate a teacher during a private music lesson, a teacher can assume that a student will soon be able to achieve the same result independently. One of the main tenets of teacher modeling followed by student imitation as a teaching technique is that the principle of the zone of proximal development is an integral part of learning process.[16] This suggests that one of the primary roles of a teacher is to help students perform at a level beyond what they could achieve independently. Music education research that focuses on student and teacher behavior during a private lesson can be analyzed to see the ways that successful teachers, either consciously or unconsciously, demonstrate and use the zone of proximal development as they work with their students. Specifically, Robert Duke and Amy Simmons observed three historically successful artist-teachers as they taught private lessons with the intent of identifying common teaching strategies.[17] The teaching strategies that Duke and Simmons observed all served to keep students working in the zone of proximal development during the private lesson.

Duke and Simmons identified nineteen different elements of instruction, which were consistently exhibited by each artist-teacher. Duke and Simmons further classified these nineteen elements into three broad categories. The first category, 'Goals and

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15. L.S. Vygotsky, *Mind in Society; The Development of Higher Psychological Processes,* ed. Michael Cole, Vera John-Steiner, Sylvia Scribner, Ellen Souberman (Cambridge: Harvard University Press, 1978), 88.

16. Ibid., 90.

17. Robert A. Duke and Amy L. Simmons, "The Nature of Expertise: Narrative Descriptions of 19 Common Elements Observed in the Lessons of Three Renowned Artist-Teachers," *Bulletin of the Council for Research in Music Education*, no. 170 (2006), 7.

Expectations' focuses on the role that a teacher plays, independent from interactions with a student. In this category, all teachers demonstrated:

1. The repertoire assigned students is well within their technical capabilities; no student is struggling with the notes of the piece.
2. Teachers have a clear auditory image of the piece that guides their judgments about the music.
3. Teachers demand a consistent standard of tone quality from their students.
4. Teachers select lesson targets (i.e., proximal performance goals) that are technically or musically important.
5. Lesson targets are positioned at a level of difficulty that is close enough to the student's current skill level that the targets are achievable in the short term and change is audible to the student in the moment.
6. The teachers clearly remember students' work in past lessons and frequently draw comparisons between present and past, pointing out both positive and negative differences.[18]

Of these elements, number five is particularly related to the theory of education outlined by Vygotsky in his description of the zone of proximal development. Both Vygotsky and the findings of Duke and Simmons show that in order for effective learning to take place, the teacher must select goals for the student that push them into the zone of proximal development, without being so far beyond a student's skill level that they feel discouraged and give up.

The second broad section, Effecting Change, deals with the way that teachers influence their students as they work to achieve performance goals. Duke and Simmons observed the following:

7. Pieces are performed from beginning to end; in this sense, the lessons are like performances, with instantaneous transitions into performance character; nearly all playing is judged by a high standard, "as if we are performing."
8. In general, the course of the music directs the lesson; errors in student performance elicit stops.
9. Teachers are tenacious in working to accomplish lesson targets, having

18. Robert A. Duke and Amy L. Simmons, "The Nature of Expertise: Narrative Descriptions of 19 Common Elements Observed in the Lessons of Three Renowned Artist-Teachers," *Bulletin of the Council for Research in Music Education*, no. 170 (2006), 11-12.

students repeat target passages until performance is accurate. (i.e., consistent with the target goal).
10. Any flaws in fundamental technique are immediately addressed; no performance trials with incorrect technique are allowed to continue.
11. Lessons proceed at an intense, rapid pace.
12. The pace of the lessons is interrupted from time to time with what seem to be "intuitively timed" breaks, during which the teachers give an extended demonstration or tell a story.
13. The teachers permit students to make interpretative choices in the performance of repertoire, but only among a limited range of that are circumscribed by the teacher; students are permitted no choices regarding technique.[19]

These findings focus on the specific principles that successful artist-teachers use to govern the private lesson time. This is particularly interesting to the current research, because those principles serve to illustrate successful learning sequences, which can be compared to a student's time allocation during self-guided practice sessions to infer the degree to which a student has integrated a teacher's way of thinking. Congruency of approach between a teacher during a private lesson and a student working independently may be an important indication of the students' developmental level.

The third and final section, Conveying Information, centers on specific ways that teachers give feedback about student performance. This is important in a general sense because teachers model the way that students should evaluate their performance when they are working independently. Duke and Simmons observed the following elements:

14. Teachers make very fine discriminations about student performances; these are consistently articulated to the student, so that the student learns to make the same discriminations independently.
15. Performance technique is described in terms of the effect that physical motion creates in the sound produced.
16. Technical feedback is given in terms of creating an interpretative effect.
17. Negative feedback is clear, pointed, frequent, and directed at very specific aspects of students' performances, especially the musical effects created.
18. There are infrequent, intermittent, unexpected instances of positive feedback, but these are most often of high magnitude and extended duration.

19. Ibid., 12-14

19. The teachers play examples from the students' repertoire to demonstrate important points; the teachers' modeling is exquisite in every respect.[20]

Observing the way that students evaluate their performances during self-guided practice is uniquely challenging because students do not typically verbalize in the same way that a teacher does during a private lesson. However, by focusing on the allocation of self-guided practice time and achievement, inferences can be made about the way they evaluate their own performances. Based on Duke's findings, a successful self-guided student practice session would be expected to demonstrate the following principles:

1. Intent is clear to an informed observer.
2. Tone quality is consistent.
3. Errors elicit stops.
4. Rehearsal targets are technically or musically important.
5. Rehearsal targets are achievable in the short term and performance goals are clearly achieved.
6. Rehearsal targets are repeated until performance is accurate.
7. Once a rehearsal target is achieved, they are tested in context in a mock performance setting.
8. Flaws in fundamental technique are addressed immediately.
9. Pace is intense and rapid.
10. Interpretative experimentation is limited.

Robert Duke also studied teacher and student behavior in an earlier study, which had a broader focus. In that study Duke trained six expert Suzuki string teachers as data gathers to collect and evaluate video data from lessons taught by twelve different expert string teachers as they taught a series of three private lessons to selected students.[21] Specifically, the data gathers observed and evaluated the way that teachers and students interacted with each other during the private lessons. Duke found that the primary teacher behavior was verbalizing to explain key concepts to the student while

20. Ibid., 14-15.

21. Robert A. Duke, "Teacher and Student Behavior in Suzuki String Lessons: Results from the International Research Symposium on Talent Education," *Journal of Research in Music Education,* 47. No.4 (1999), 297.

the primary student behavior was performance. However, the way that teachers present content in a private lesson also affects the way that students experience the lesson. It has been found that a teacher's presentation during a private lesson determines the level of interest that students show, rather than a teacher's content.[22] These findings underscore the model of instruction that was laid out by Vygotsky where a teacher explains how a student should modify a performance and then the student tries to implement the advice in a performance trial. Duke's research in this study is of interest to the present study because of the major difference between what happens during a lesson and in self-guided student practice. During self-guided student practice, modifications of the performance must come from the student since there is no outside source of feedback. Knowing exactly what causes students to modify their performances during self-guided practice could be useful information for a teacher because a teacher could evaluate which sources of feedback are most effective for each student. This could include external sources of feedback, such as a tuner or metronome, internal sources of feedback, such as students' pre-determined characteristics of a high quality performance, or some combination of internal and external sources of feedback. Duke's research provides empirical evidence that a teacher provides much of the stimulus for change during a private lesson and that knowledge, coupled with Vygotsky's theory that a student gradually adopts a teacher's way of thinking through imitation, leads to the conclusion that as a student develops, he or she will increasingly take on the role of the teacher and independently provide stimuli for change during self-guided practice.

There is no doubt that the role of the teacher in private music study is an important one but that is not to say that it's the teacher's duty to correct every error that

22. Donald L. Hamann et al., "Factors Affecting University Music Students' Perceptions of Lesson Quality and Teaching Effectiveness," *Journal of Research in Music Education,* 48. No. 2 (2000), 111.

may present itself to a student. An important benefit of students engaging in frequent self-guided practice is that they are given ample opportunities to experiment and test their theories independently, which helps them discover the strategies that are effective for them. Duke discusses the idea that teachers have the duty to help students learn to teach themselves:

> Learners' attempts to resolve the dissonance between their expectations and subsequent outcomes create new memories and refine old ones. Being told or shown by a caring teacher how to correct the errors you make is not at all the same as resolving errors on your own, because the teacher can do much of the work for you: locate the error, explain its cause, and provide a prescription for eliminating it. Consider that in order to correct errors on your own, you first have to *have an intention,* and then have to *perceive the discrepancy* between it and the outcome, and then have to *change your behavior* to eliminate it, most often over the course of multiple repetitions.[23]

Duke underscores that one of the most important parts of the learning process is a student's experience of correcting errors independently. Because students learn the most during that cycle, a teacher's prime goal should be to foster students' independent error correction and guide them as they learn to teach themselves.

STUDENT BEHAVIOR DURING SELF-GUIDED PRACTICE

The behavior that students exhibit as they engage in self-guided practice has also been researched. Nancy Barry studied student performance to determine the effect of practice strategies, cognitive style, and gender on technical accuracy and musicality. Barry used two different categories to measure the difference in cognitive style. The Field-Dependence learner is characterized by experiences that are strongly influenced by the organization of the visual field whereas a Field-Independence learner has a cognitive style where the learning experience is less dependent on the organization of

23. Robert A. Duke, "Their Own Best Teachers: How We Help and Hinder the Development of Learners' Independence," *Music Educators Journal* 99, No. 2 (2012**),** 38.

the visual field.[24] Barry studied 57 wind players in grades 7-10 and separated student participants into two groups; a structured practice group, which was instructed how to practice and a free practice group, which was allowed to practice however they wanted. Although the students were allowed to practice how they wished in this study, the private lesson in the present study will function much in the same way as the structured, adult-lead practice sessions did in Barry's work. However, the fact that the students in Barry's work were much younger cannot be overlooked. Although not always a flawless indication of developmental level, Vygotsky's research shows that calendar age often correlates with developmental level. Because the participants in the present study are older than the participants in Barry's study, one would expect to see a less pronounced version of Barry's findings when comparing teacher-guided lessons with self-guided student practice sessions. As expected, Barry found differences in practice behavior between the free practice group and the structured practice group, as well as a difference in the effectiveness of their practice. Barry found that structured practice was more effective at improving rhythmic and melodic accuracy than free practice and the two types of practice differed in the following seven categories:

1. *Practice Tempo*. Free practice subjects attempted to play at faster tempos while structured practice subjects were required to increase the tempo from slow to fast.
2. *Use of Metronome*. Structured practice subjects were required to use the metronome and free practice subjects generally didn't use the metronome.
3. *Silent Practice*. Structured practice subjects were required to look and finger through the music silently before playing. Free practice students generally didn't do those things.
4. *Tapping rhythm*. Free practice students did not tap the rhythm of the etude while structured practice students were required to tap the rhythm of the entire etude before playing.

24. Nancy H. Barry, "The Effects of Practice Strategies, Individual Differences in Cognitive Style, and Gender upon Technical Accuracy and Musicality of Student Instrumental Performance," *Psychology of Music*, 20. (1992), 113.

5. *Identification and rehearsal of trouble spots.* Structured practice students were required to mark errors and practice those sections very slowly. Generally, free practice subjects practiced the trouble spots at the same tempo as the rest of the etude and did not mark errors.
6. *Marking music*. Structured practice subjects were required to mark their music where errors occurred. Free practice subjects generally did not mark their music.
7. *Supervised practice*. Structured practice sessions were monitored by an adult who was present for the entire practice session. Free practice sessions were taped but the monitor was not present during the practice session.[25]

Maynard also studied practice behaviors, but she took a rather different approach than Barry. Maynard observed practice sessions of artist-teachers as well as their students and specifically looked for differences in the way repetition was used as a practice technique. Maynard instructed her participants to practice as they normally would and made no attempt to influence their normal practice behaviors.[26] Maynard organized each practice session into target passages and then counted how many times the participants repeated each passage.[27] The information revealed, by comparing the practice sessions, that artist-teachers used repetition as their main practice strategy. Maynard chose student participants representing three educational levels; graduate students, advanced undergraduate students, and beginning undergraduate students.[28] The present study also observes the effect of accumulated lessons on student behavior during self-guided practice by comparing behavior during a private lesson and during a self-guided student practice. However, there has been research that suggests that study time, at least in the short term, is not a good indicator of student achievement.[29]

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25. Ibid,. 119-120
26. Lisa M. Maynard, "The Role of Repetition in the Practice Sessions of Artist Teachers and Their Students," *Bulletin of the Council for Research in Music Education,* No. 167 (2006), 64.
27. Ibid., 64
28. Ibid., 64.
29. E. Ashby Plant et al., "Why Study Time Does Not Predict Grade Point Average Across College Students: Implications of Deliberate Practice for Academic Performance," *Contemporary Educational Psychology*, 30 (2005), 96.

Rather than length of study time, the amount of high quality, focused practice is closely related to performance achievement.[30]

Maynard found that while all of the participants used repetition as a practice strategy, the beginning undergraduate students repeated each target passage about half as many times as did the graduate students and artist-teachers.[31] Her findings are not surprising. One expects that student practice behavior would more closely resemble an artist-teacher's with the accumulation of lessons, but Maynard's research doesn't explain why this takes place. Ericsson's research has shown that expert performance depends heavily on the use of deliberate practice as a strategy to isolate and improve characteristics of performance.[32] Ericsson identifies the characteristics of deliberate practice as:

> The most cited condition concerns the subjects' motivation to attend to the task and exert effort to improve their performance. In addition, the design of the task should take into account the preexisting knowledge of the learners so that the task can be correctly understood after a brief period of instruction. The subjects should receive immediate informative feedback and knowledge of results of their performance. The subjects should repeatedly perform the same or similar tasks.[33]

Deliberate practice has also been researched in an organizational setting. Kanfer states that "Abilities are relatively fixed; to change skill level, one must apply attentional effort and energy to relevant training tasks."[34] The current research uses the comparison strategy used by Maynard, but rather than comparing expert and novice practice sessions, the present study compares content and context in private lessons to self-

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30. Ibid., 111.

31. Lisa M. Maynard, "The Role of Repetition in the Practice Sessions of Artist Teachers and Their Students," *Bulletin of the Council for Research in Music Education*, No. 167 (2006), 69-70.

32. K. Anders Ericsson, Ralf Th. Krampe, and Clemens Tesch-Römer, "The Role of Deliberate Practice in the Acquisition of Expert Performance," *Psychological Review*, 100 No. 3 (1996), 368.

33. Ibid., 367.

34. Ruth Kanfer, Gilad Chen, and Robert D. Pritchard, "The Three C's of Work Motivation: Content, Context, and Change," In *Work Motivation: Past, Present, and Future*, (New York: Routledge, 2008) 4.

guided student practice sessions, which could help identify differences between a teacher's time allocation and target selection strategies during a private lesson and a student's during self-guided practice. A better understanding of this relationship could streamline the process of integrating the teacher's way of thinking to help a student progress faster and ultimately reach a higher developmental level.

Additional research has been done that observes student practice to identify the most frequently used practice strategies. Duke, Simmons and Cash designed a study that focused on the effect of practice strategies on a performance of a difficult keyboard passage from a piano concerto. They found that the quality of practice was more important than the quantity and that the practice strategies used by students also affected the outcome.[35] This is not surprising, but that research went a step further and identified the practice strategies used by the most successful participants. These were:

1. Playing hands-together early in practice.
2. Practice with inflection early on; the initial conceptualization of the music was with inflection.
3. Practice was thoughtful, as evidenced by silent pauses while looking at the music, singing/humming, making notes on the page, or expressing verbal "ah-ha"s.
4. Errors were preempted by stopping in anticipation of mistakes.
5. Errors were addressed immediately when they appeared.
6. The precise location and source of each error was identified accurately, rehearsed, and corrected.
7. Tempo of individual performance trials was varied systematically; logically understandable changes in tempo occurred between trials (slowed down enough; didn't speed up too much).
8. Target passages were repeated until the error was corrected and the passage was stabilized, as evidenced by the error's absence in subsequent trials.[36]

These findings are strikingly similar to the 19 strategies observed in Duke's study of effective teaching, which leads one to think that as a student becomes more successful,

35. Robert A. Duke, Amy L. Simmons, and Carla Davis Cash, "It's Not How Much; It's How: Characteristics of Practice Behavior and Retention of Performance Skills," *Journal of Research in Music Education*, 56 No. 4 (2009), 315.

36. Ibid., 317.

their self-guided practice behaviors more closely resemble that of a teacher. This hypothesis is also strongly suggested in Vygotsky's Zone of Proximal Development whereby students with a greater accumulation of lessons become more able to independently challenge themselves and they use practice strategies that more closely resemble the strategies used by their teacher. Research that focuses on self-guided student practice from the perspective of the student is also relevant to the current research. In the traditional model of an hour long weekly private lesson followed by many hours of self-guided student practice, the primary source of information for a teacher to evaluate student practice, other than results that a student demonstrates in their progress, is a student's report of his own practice. However, students may not always have a flawless perception of what they did during their practice sessions or its effectiveness to produce a desired result. A situation in private music lessons often arises when a teacher believes that he has been clear in prescribing what a student is to do, the student thinks that he has followed the teacher's instructions, but the desired result wasn't achieved. Discovering exactly where and why the breakdown in communication occurred is essential for both a teacher and a student so that optimal results can be achieved.

Peter Miksza conducted a study among high school wind players exploring the relationship between self-reported practice habits and level of achievement. Miksza observed three 25-minute sessions and after each session students rated the effectiveness of their practice sessions. In order to evaluate the level of achievement, Miksza composed an etude, which each student performed six times over the course of the study. Miksza found during the observation of the practice sessions that the behaviors that student participants most often demonstrated were *repeat measure*, *repeat*

section, and *marks part.*[37] Miksza found significant relationships between the behaviors *repeat section, whole-part-whole, slowing, skipping directly to or just before critical musical sections of the etude* and the level of performance achieved by the students as well as the self-reported percentage of time spent either formally or informally practicing with a metronome.[38] It is not surprising that Miksza's findings show that the quality of practice is more important than the quantity of time that each student spent practicing.[39] However, effectiveness of self-guided student practice is also reliant on the intent of students as they carry out behaviors that typically produce desired results. In other words, it's clear intent that produces effective practice and the strategies that Miksza observed are the byproducts of that intent. Rainero speaks on the role of deliberate practice in voice students and says:

> When a singer first reads through a new piece of music, the tendency is to sing everything at once: notes, rhythm, and text. This makes sense for an initial reading, in order to comprehend the larger contours of the piece and scope out potential obstacles. But continuing to practice all three elements simultaneously is a recipe for doing a mediocre job with each one, and even embedding incorrect habits. Separating language from the other two elements, and separating melody from rhythm as well, enables the singer to focus on a narrower task and thereby to concentrate on *how* to accomplish each task well.[40]

When a student addresses the challenges in a piece of music that he is practicing individually, the student is actually able to transfer knowledge across domains more effectively and as a result make progress faster. These findings underscore the importance of the role of the teacher in shaping the way that a student uses individual practice time and suggests that a prime goal of private instruction is teaching a student

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37. Peter Miksza, "Effective Practice: An Investigation of Observed Practice Behaviors, Self-Reported Practice Habits, and the Performance Achievement of High School Wind Players." *Journal of Research in Music Education,* 55 No. 4 (2007), 359.

38. Ibid., 359.

39. Ibid., 372.

40. Ruth Rainero, "Practicing Vocal Music Efficiently and Effectively: Applying "Deliberate Practice" to a New Piece of Music," *Journal of Singing*, 69 No. 2 (2012), 205.

how to structure self-guided practice time. However, the difficulty of the task that the student is engaging in can affect the amount of deliberate thought needed for a successful result.[41] When a task is easy, experts perform best with less deliberate thought, which suggests that the same deliberate intent can't be tasks of varying difficulty.[42]

A consideration of how students structure their practice time is how often they change what they work on. Stambaugh researched the effects of blocked vs. random practice strategies. A blocked practice strategy is when all practice trials on one example occur before beginning the next practice example whereas during random practice, examples are interspersed.[43] She found that at the end of a practice session there were no significant differences between blocked and random practice groups for accuracy, speed, or temporal evenness.[44] However, when tested for retention, students who practiced with a random strategy performed an example significantly faster with no loss of accuracy.[45]

Self-Guided practice is also interesting because students are responsible for monitoring their progress and choosing practice strategies that will help them reach their performance goals. This requires a four-step process; the student must identify the problem, choose a plan of action, implement the plan, and then assess to see if the strategy was successful. This presents a challenge of perception to the student. Perception has been studied by Simons and Chabris in the context of dynamic events and it was found that the more complex the task, the more likely that errors in

41. Jerad H. Moxley et al., "The Role of Intuition and Deliberative Thinking in Experts' Superior Tactical Decision-Making," *Cognition,* 124 (2012), 76.
42. Ibid., 76.
43. Laura A. Stambaugh, "When Repetition Isn't the Best Practice Strategy: Effects of Blocked and Random Practice Schedules," *Journal of Research in Music Education*, 58 No. 4 (2011), 369.
44. Ibid., 368.
45. Ibid., 377.

perception would occur.[46] Although that study focused on visual perception, it is reasonable to infer that there could be a similar phenomenon in an auditory realm. It is common, especially at a collegiate level, for music students to spend weeks or months learning a piece of music while constantly adding new dimensions of refinement and therefore, difficulty to the familiar piece. The familiarity with the material could cause students to miss details that they would otherwise catch in a novel setting, which is useful information for both students and teachers. Utilizing audio and video recording can serve as a way to overcome a decline in perception as a student engages in the complex task of practicing and performing her instrument. Reviewing a recording of their practice, rather than assessing their performance in the moment, allows students a greater degree of objectivity because they are focusing only on listening. It is also true that as a student becomes more experienced, his awareness increases and he become more critical of performance, which further illustrates the fluidity of perception.[47]

PRIVATE LESSON BEHAVIOR OBSERVATION TECHNIQUES

The use of rehearsal frames and target passages as the starting point of analysis has precedence in previous research regarding private lessons and self-guided practice sessions. Colprit utilized rehearsal frames to analyze private music lessons. A rehearsal frame begins when a teacher identifies an aspect of student performance that needs improvement and it ends when the goal is accomplished or work towards a new instructional goal is initiated.[48] In a typical rehearsal frame a teacher guides a student

46. Daniel J. Simons and Christopher F. Chabris, "Gorillas in Our Midst: Sustained Inattentional Blindness for Dynamic Events," *Perception,* 28 (1999), 1059.

47. Katia Madsen and Jane W. Cassidy, "The Effect of Focus of Attention and Teaching Experience on Perceptions of Teaching Effectiveness and Student Learning," *Journal of Research in Musical Education*, 53 No. 3 (2005), 229.

48. Elaine J. Colprit, "Observation and Analysis of Suzuki String Teaching," *Journal of Research in Music Education,* 48 No. 3 (2000), 209.

through a series of performance trials to help him achieve a predetermined performance goal. Each performance trial generally moves closer and closer to the desired result, the teacher guiding the student through each step. The method of using rehearsal frames to analyze private lessons provides insight into the specific behaviors that teachers use to influence student performance, as well as providing information about the way that teachers use the lesson time to effect change in student performance.

When a student works independently during self-guided practice, instructional goals aren't verbalized as they are during a private lesson. However, behaviors exhibited by students, and material chosen by them, can provide valuable information to compare the approach a teacher takes during a private lesson and the approach a student takes during self-guided practice. For these reasons, the current research will use a 'target passage' based approach to analyze self-guided student practice. Although target passages will be the focus of analysis for the self-guided practice sessions, rehearsal frames should also be apparent in an effective self-guided practice session. If a student's ability to identify and solve problems is clear and easily observable, then it can be argued that a student is thinking clearly and in a way that is similar to his teacher's way of thinking. One of the prime objectives of the present study is to identify differences in thinking and problem solving strategies between the teacher and the students and to look for explanations as to why differences occur.

GOALS AND GOAL SETTING

Studies concerning human motivation during independent work are also relevant to this research because they can help explain the behaviors that students demonstrate as they engage in self-guided practice. The field of Industrial and

Organizational Psychology has many studies that focus on worker motivation and specifically the role that goals play in achieving optimal worker productivity. Locke and Latham found that the highest level of effort from participants occurred when the task was moderately difficult, and the lowest levels occurred when either the task was very easy or very hard.[49] These findings mirror Vygotsky's Zone of Proximal Development theory, which also shows that if a task is too difficult a student becomes discouraged, and if a task is too easy a student will become bored, both resulting in a decline in student effort. Locke and Latham went a step further and identified four ways that goals affect performance:

1. Goals serve a directive function; they direct attention and effort toward goal-relevant activities and away from goal-irrelevant activities. This effect occurs both cognitively and behaviorally.
2. Goals have an energizing function. High goals lead to greater effort than low goals.
3. Goals affect persistence. When participants are allowed to control the time they spend on a task, hard goals prolong effort. There is often, however, a trade-off in work between time and intensity of effort. Faced with a difficult goal, it is possible to work faster and more intensely for a short period or to work more slowly and less intensely for a long period. Tight deadlines lead to a more rapid work pace than loose deadlines.
4. Goals affect action indirectly by leading to the arousal, discovery, and/or use of task-relevant knowledge and strategies.[50]

When applied to a musical setting, these findings can be powerful tools for teachers when assessing a student's practice habits, and they could provide answers to persistent problems in student achievement. Students could also use this information when selecting their own goals so that their goals are challenging enough to maintain their interest without being discouraging.

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49. Edwin A. Locke and Gary P. Latham, "Building a Practically Useful Theory of Goal Setting and Task Motivation," *American Psychologist, 57* (2002), 705.

50. Ibid., 706-707.

However, there are pitfalls in using goal setting as the only means of motivation, both in an organizational setting and in a musical setting. Ordóñez et al systematically lay out the possible side effects that overprescribing goals can have on motivation and created a chart that serves to check that goals are being used responsibly.

Figure 1. Goal Setting Checklist

Ten Questions to Ask Before Setting Goals

Question to ask before setting goals	Why is this important to ask?	Possible remediation
Are the goals too specific?	Narrow goals can blind people to important aspects of a problem.	Be sure that goals are comprehensive and include all of the critical components for firm success (e.g., quantity and quality).
Are the goals too challenging?	What will happen if goals are not met? How will individual employees and outcomes be evaluated? Will failure harm motivation and self-efficacy?	Provide skills and training to enable employees to reach goals. Avoid harsh punishment for failure to reach a goal.
Who sets the goals?	People will become more committed to goals they help to set. At the same time, people may be tempted to set easy-to-reach goals.	Allow transparency in the goal-setting process and involve more than one person or unit.
Is the time horizon appropriate?	Short-term goals may harm long-term performance.	Be sure that short-term efforts to reach a goal do not harm investment in long-term outcomes.
How might goals influence risk taking?	Unmet goals may induce risk taking.	Be sure to articulate acceptable levels of risk.
How might goals motivate unethical behavior?	Goals narrow focus. Employees with goals are less likely to recognize ethical issues, and more likely to rationalize their unethical behavior.	*Multiple* safeguards may be necessary to ensure ethical behavior while attaining goals (e.g., leaders as exemplars of ethical behavior, making the costs of cheating far greater than the benefit, strong oversight).
Can goals be idiosyncratically tailored for individual abilities and circumstances while preserving fairness?	Individual differences may make standardized goals inappropriate, yet unequal goals may be unfair.	If possible, strive to set goals that use common standards and account for individual variation.
How will goals influence organizational culture?	Individual goals may harm cooperation and corrode organizational culture.	If cooperation is essential, consider setting team-based rather than individual goals.Think carefully about the values that the specific, challenging goals convey.
Are individuals intrinsically motivated?	Goal setting can harm intrinsic motivation.	Assess intrinsic motivation and avoid setting goals when intrinsic motivation is high.
What type of goal (performance or learning) is most appropriate given the ultimate objectives of the organization?	By focusing on performance goals, employees may fail to search for better strategies and fail to learn.	In complex, changing environments, learning goals may be more effective than performance goals.

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51. Lisa D. Ordóñez, Maurice E. Schweitzer, Adam D. Galinsky, and Max H. Bazerman, "Goals Gone Wild: The Systematic Side Effects of Overprescribing Goal Setting," *Academy of Management Perspectives*, 23. (2009), 13.

Ordóñez et al identifies that using goals, no matter how well designed, and goal setting as the only means of motivation, will not achieve the desired performance. Motivation is a multifaceted topic and goal setting is only one way to affect performance.

There are two general dispositions that have been identified when observing people who are engaging in novel tasks; learning goal-orientation and performance goal-orientation. The research suggests that goal-orientation is best viewed as a continuum and individuals who identify with learning goal-orientation strive to understand something new about or increase their level of competence in a given activity, use personal standards to evaluate their level of task mastery, are generally less anxious and more efficacious when learning a new task, and allocate greater effort towards task accomplishment.[52] On the other hand, individuals leaning to a performance goal-orientation seek to gain favorable judgment and demonstrate their competence via task performance. Performance goal-oriented individuals believe their ability is relatively fixed, prefer normative standards to evaluate their level of task mastery, and tend to be more anxious and less efficacious when learning new skills.[53] This information is useful in a musical setting because it underscores the fact that not all students will approach learning new skills and repertoire in the same way. If a music teacher is cognizant of this fact and frames the novel task in a way the fits a student, then some of the negative consequences of a performance goal-orientation could be avoided. For example, a performance goal-disposition tends to approach learning a new task by centering effort on avoiding embarrassment through demonstrating competence,

52. Gilad Chen and John E. Mathieu, "Goal Orientation Dispositions and Performance Trajectories: The Roles of Supplementary and Complimentary Situational Inducements," *Organizational Behavior and Human Decision Processes*, 106 (2008), 23.

53. Ibid., 23.

which typically falls short of achieving the mastery required in a musical setting.[54] However, framing the new task in a way that emphasizes mastery and giving feedback that is individual based, rather than normative based can minimize the negative effects of the performance goal-orientation.[55] It has been found that musicians tend to find intrinsic factors more motivating than they do extrinsic factors.[56] However, motivation orientation, including goal-orientation, is measured on a scale so knowledge of the strengths and weaknesses of each orientation can serve to help teachers and students overcome challenges associated with each.

SUMMARY

Vygotsky's theory of human learning, the zone of proximal development, states that students only learn when they are working just beyond their capabilities. Music teachers guide students into the zone of proximal development during private lessons through verbal explanations and modeling. Assistance from a teacher helps the student to perform at a level that they would be unable to reach independently. Duke's research of master teachers demonstrates three artist-teachers' use of modeling to help their students perform beyond their independent capabilities.[57] Since music students spend a great deal of time engaging in self-guided practice, the behavior that students demonstrate as they work independently is integral to their development. Ericsson's research of skill acquisition shows that improvement depends more on high quality independent practice than on quantity of independent practice. In order to engage in

54. Ibid., 24.
55. Ibid., 35.
56. Frank M. Diaz, "Intrinsic and Extrinsic Motivation Among Collegiate Instrumentalists," *Contributions to Music Education*, 37 No. 1 (2010), 23.
57. Robert A. Duke and Amy L. Simmons, "The Nature of Expertise: Narrative Descriptions of 19 Common Elements Observed in the Lessons of Three Renowned Artist-Teachers," *Bulletin of the Council for Research in Music Education*, no. 170 (2006), 14-15.

high quality deliberate practice, students must identify a problem, devise a solution, implement their plan, and test the results in the original context. These steps require that students are aware of their current level of achievement as well as the level of achievement they are trying to achieve. As students set goals for themselves during self-guided practice, the goals produce student effort, focus the effort, affect persistence, and lead them to discover new goals.[58] However, the goals that students set can also be discouraging if they are too far beyond their current capabilities and the goals could cause the student to ignore other important goals. Therefore, teachers must elevate a student's awareness during a lesson and help the student structure his self-guided practice so that goals are appropriate and achievable.

58. Edwin A. Locke and Gary P. Latham, "Building a Practically Useful Theory of Goal Setting and Task Motivation," *American Psychologist, 57* (2002), 705.

CHAPTER III. METHOD

Participants in this study include three student clarinetists and one artist-teacher of clarinet at a state university. The student participants consist of a graduate student, an undergraduate student who has had more than four semesters of applied lessons, and an undergraduate student who has had fewer than four semesters of applied lessons. Students of differing academic level were chosen to explore the relationship between accumulated lessons and effect on self-guided student practice. All student participants were music majors enrolled in music performance and music education degree programs. As part of the requirements of their degrees, each student receives a 60-minute private lesson per week with an artist teacher and practices for a minimum of twelve hours of individual private practice per week. Student participants were recruited during the weekly group meeting time for the clarinet studio at the university. All student participants submitted a signed consent form that outlined the nature of the research, the criteria for participation, and the tasks that they would be asked to complete before any data collection began.

Three private lessons with an artist-teacher were videotaped for each student and during the week following each private lesson, each student was videotaped during one self-guided practice session in his or her preferred practice space. The length of time between the recorded lesson and the recorded self-guided practice session varied. Students were instructed to practice as they normally would and what resulted for each student participant were three recorded private lessons and three recorded self-guided practice sessions. After all video data were collected; a verbal exit interview was conducted to gather further information regarding the students' perceptions of effectiveness during self-guided practice sessions.

Figure 2. Exit Interview Questions for Student Participants

1. What is your current age?
2. How long have you played the clarinet?
3. At what age did you begin playing the clarinet?
4. How long have you taken private lessons?
5. How did you learn to practice?
6. How do you typically spend your practice time?
7. How do you detect problems in your playing?
8. Do you feel like you improve when you practice?
9. Do you incorporate scales, exercises, or etudes in your practice routine?
10. How do you approach learning new repertoire?
11. What sort of planning do you do before you begin your practice?
12. Do you ever practice away from your instrument? If so, how?
13. Do you audiotape your practice for later review? If so, why?
14. Do you videotape your practice for later review? If so, why?
15. Do you use a metronome? How and for what purpose?
16. Do you use a tuner? How and for what purpose?
17. Do you sing or speak during your practice session? How does that help you?
18. Do you have anything else you'd like to share about practicing?

These questions were designed to compare the students' concept of the elements that generally characterize effective practice with the behaviors included in their own self-guided practice. By comparing what they think they should do with what they actually do and what they think they actually do with what is done during the weekly private lesson, a more complete assessment can be made.

The analysis of the data began with the private lesson videos. Each private lesson video was viewed and a chronological overview of the lesson was made, notating each rehearsal frame, its timing, and describing student and teacher behavior as they worked on identifiable instructional goals. Once the chronological overview was completed, a portion of each private lesson was selected for a more detailed analysis using SCRIBE 4.2. SCRIBE 4.2 is a computerized data analysis program that allows users to label events in live observations or in QuickTime movies, to summarize event timings, and to

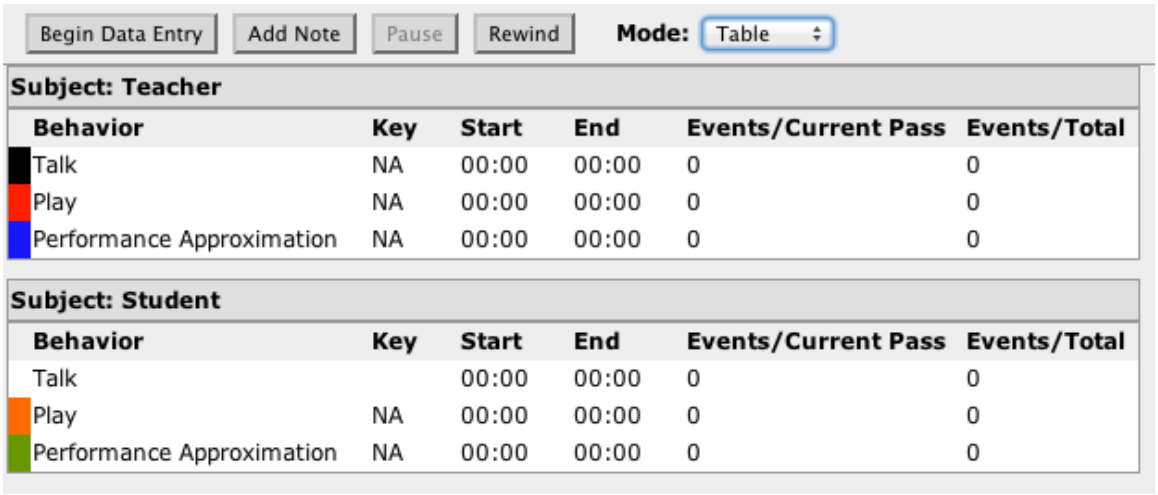
play back labeled events.[59] Criteria for selection for SCRIBE analysis included the following: (1) the segment had to be between 5 – 11 minutes in length, (2) the segment of the lesson was devoted to working on a section of a piece that had been previously introduced, and (3) the student had practiced the identical or a similar passage from the same piece during his or her corresponding self-guided practice session. SCRIBE 4.2 was used to record the frequency, rate per minute, duration, percentage of time, mean duration, and standard deviations for behaviors demonstrated during the target passage selected for analysis from each private lesson.

For each private lesson selection, SCRIBE was used to observe the following behaviors: teacher verbalizations, student verbalizations, teacher performance approximations, student performance approximations, teacher playing, and student playing. These behaviors were chosen because the statistics generated by them gave a clear picture of how the teacher allocated time in the private lesson. To further classify how time was used during the selections from the private lessons, the targets the teacher focused on were incorporated into the SCRIBE observation. These targets included articulation, rhythm, tone quality, interpretation and breathing. For the purposes of this research, articulation refers to a focus on the way notes begin or end, rhythm refers to both issues of pulse or timing, tone quality refers to intonation or tone color, interpretation refers to style, mood, or expressive intent, and breathing refers to inhaling or exhaling. Generally, the teacher made the target during the private lesson selection clear, but in instances where the teacher didn't verbalize his intent, the target was inferred based on the behaviors exhibited by the student and teacher. Each private lesson selection was viewed twice in SCRIBE; once recording the teacher's behaviors

59. Robert A. Duke and Dale Stammen, "Scribe 4 Software," *The University of Texas at Austin: Center for Music Learning*, Accessed 11/25/2012, http://cml.music.utexas.edu/online-resources/scribe-4/description/.

and once recording the student's behaviors. The SCRIBE observation of the selections from the private lessons produced a statistical representation of how the lesson time was used as they worked on the section of the piece. Figure 2 is an example of the SCRIBE setup used for the analysis of one target in the private lessons.

Figure 3. Sample Scribe Setup for Private Lesson Analysis



Subject: Teacher

Behavior	Key	Start	End	Events/Current Pass	Events/Total
Talk	NA	00:00	00:00	0	0
Play	NA	00:00	00:00	0	0
Performance Approximation	NA	00:00	00:00	0	0

Subject: Student

Behavior	Key	Start	End	Events/Current Pass	Events/Total
Talk		00:00	00:00	0	0
Play	NA	00:00	00:00	0	0
Performance Approximation	NA	00:00	00:00	0	0

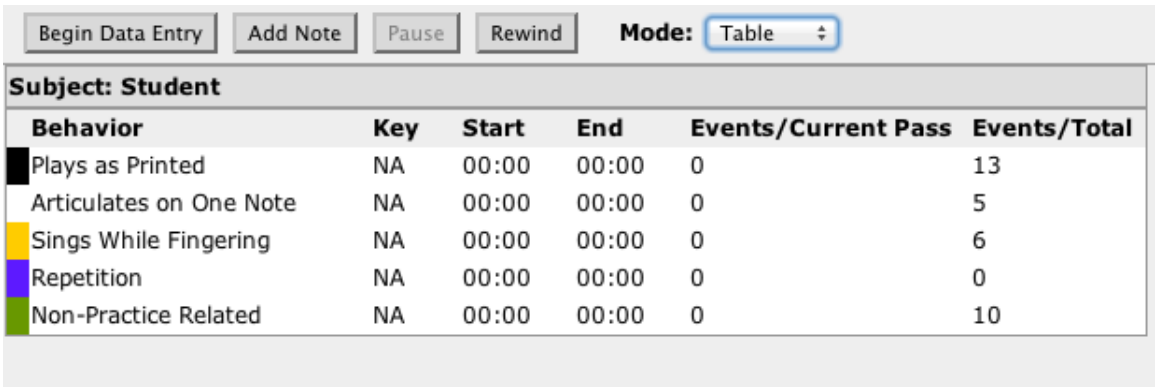
The analysis of the self-guided practice videos began similarly, by watching each video and noting the timing and describing the behaviors that the students demonstrated. What resulted was a chronological overview of the self-guided practice sessions. A portion of each self-guided practice session was selected for a more detailed analysis using SCRIBE 4.2. Criteria for selection for SCRIBE observation included the following: (1) the segment had to be between 5 – 11 minutes in length, (2) the segment of the lesson was devoted to working on a section of a piece that had been previously introduced, and (3) the identical or a similar passage from the same piece was worked on during his or her corresponding private lesson.

The SCRIBE observation of the selections from the self-guided practice sessions required a different approach from those used in the private lesson. During the private lesson, the teacher gave verbal feedback and explanations to inform the student as to

which target was being worked on. This articulated the teacher's thought process in allocating time in the private lesson. During self-guided practice, students do not verbalize their intent, therefore, the SCRIBE observation of the self-guided practice sessions focused on the behaviors that the students demonstrated as they worked on each musical selection rather than the targets of articulation, rhythm, tone quality, interpretation and breathing. This approach decreased the likelihood of inaccurate results that could occur by incorrectly assigning the intent of a student's practice behaviors.

Using the chronological overview to isolate behaviors such as singing, playing, and tuning in the selected passage, SCRIBE was formatted. Additionally, each repetition that the student made on the clarinet was counted and a category was included to account for time that wasn't related to practice, such as cleaning the clarinet. Over multiple viewings, data for the demonstrated behaviors and repetitions were recorded using SCRIBE. A sample setup can be seen in figure 3.

Figure 4. Sample Scribe Setup for Self-Guided Practice Analysis



What resulted was a statistical representation of students' behavior as they practiced selections. Because each student demonstrated different behaviors during each practice session, the SCRIBE observation was unique for each student's self-guided practice session selection. This individualized approach, coupled with information from

the exit interview and the chronological overview about what happened before and after the musical selection was practiced, allowed for comparisons between the private lesson SCRIBE data and self-guided practice SCRIBE data.

After all private lesson and self-guided practice video selections were processed using SCRIBE, the data from each student's private lessons and self-guided practice sessions were compared. The responses from the student exit interviews were compared with behaviors demonstrated during the student's self-guided practice sessions to determine if there were disparities between the students' perceptions of their practice and their demonstrated behaviors.

CHAPTER IV. RESULTS

STUDENT 1

Student one was an undergraduate student who had had fewer than four semesters of applied lessons and SCRIBE data for teacher and student behavior from the first private lesson is reported in table one. The target that was addressed in the selection from lesson one was interpretation and the primary behavior during this selection was teacher verbalizations, which accounted for 40.28% of the lesson and the teacher spent 33.48% demonstrating through performance approximations. Student playing accounted for 35.73% of the lesson and the student also verbalized for 15.50% of the lesson and performed two short performance approximations, which accounted for 0.5291% of the lesson. The total percentage of time is greater than 100% because the teacher often spoke and made performance approximations while the student was playing.

Table 1. Student 1, Private Lesson 1 Scribe Data: Debussy; *Première Rhapsodie*, 12 After Rehearsal 6 – 8 Before Rehearsal 8

INTERPRETATION	**Freq.**	**Rate/Min**	**Time**	**% Time**	**Mean**	**SDev**
Teacher Verbalization	46	5.507	03:21.8	40.28	00:04.3	3.77
Teacher Plays	0	0.000	00:00	0.000	00:00	0.00
Teacher Approximation	31	3.711	02:47.7	33.48	00:05.4	3.97
Student Verbalization	13	1.556	01:17.6	15.50	00:05.9	4.28
Student Plays	20	2.394	02:59.0	35.73	00:08.9	8.40
Student Approximation	2	0.2394	00:02.6	0.5291	00:01.3	0.31

During the student's first self-guided practice session the student demonstrated five distinct behaviors and SCRIBE data is reported in table two. The student spent 63.36% of the session playing the passage as printed, 19.20% singing while fingering, 10.74% on non-practice related behaviors, such as cleaning the instrument, and 6.374% articulating the piece on one note. The student also performed 108 repetitions at a rate of 12.46 per minute.

Table 2. Student 1, Self-Guided Practice Session 1 Scribe Data: Debussy; *Première Rhapsodie*, 12 After Rehearsal 6 – 8 Before Rehearsal 8

	Freq.	**Rate/Min**	**Time**	**% Time**	**Mean**	**SDev**
Plays as Printed	13	1.500	05:29.5	63.36	00:25.3	18.32
Articulates on One Note	5	0.5768	00:33.1	6.374	00:06.6	5.08
Sings While Fingering	6	0.6921	01:39.8	19.20	00:16.6	11.44
Repetition	108	12.46	N/A	N/A	N/A	N/A
Non-Practice Related	10	1.154	00:55.8	10.74	00:05.5	3.05

The target that was addressed in lesson two was interpretation and the SCRIBE data is reported in table three. The teacher spent 38.42% of the lesson verbalizing and 31.43% making performance approximations while the student spent 21.67% of the lesson verbalizing and 26.97% playing. As in lesson one, the percentage of time during lesson two is greater than 100% because the teacher often verbalized and made performance approximations while the student was playing.

Table 3. Student 1, Private Lesson 2 Scribe Data: Debussy; *Première Rhapsodie,* Rehearsal 1 – 4 Measures After Rehearsal 1

INTERPRETATION	**Freq.**	**Rate/Min**	**Time**	**% Time**	**Mean**	**SDev**
Teacher Verbalization	29	4.009	02:46.7	38.42	00:05.7	5.07
Teacher Plays	0	0.000	00:00.0	0.000	00:00.0	0.00
Teacher Approximation	11	1.521	02:16.4	31.43	00:12.4	8.86
Student Verbalization	19	2.627	01:34.0	21.67	00:04.9	4.94
Student Plays	10	1.382	01:57.0	26.97	00:11.7	7.81
Student Approximation	0	0.000	00:00.0	0.000	00:00.0	0.00

During the second self-guided practice session the student demonstrated three behaviors and SCRIBE data is reported in table four. Playing as printed accounted for 84.66% of the lesson, non-practice related behaviors accounted for 14.95%, and the student made 33 repetitions at a rate of 5.349 per minute.

Table 4. Student 1, Self-Guided Practice Session 2 Scribe Data: Debussy: *Première Rhapsodie*, 8 Measures Before Rehearsal 8 – 2 Measures Before Rehearsal 10

	Freq.	**Rate/Min**	**Time**	**% Time**	**Mean**	**SDev**
Plays as Printed	8	1.297	05:13.3	84.66	00:39.1	20.25
Repetition	33	5.349	NA	NA	NA	NA
Non-Practice Related	8	1.297	00:55.3	14.95	00:06.9	7.85

The third private lesson focused on the target of intonation and SCRIBE data is reported in table five. The primary teacher behavior was verbalizations, which used 67.35% of the time and the teacher made performance approximations for 1.926% of the lesson. The student spent 25.31% of the lesson playing and 14.70% verbalizing. As in the previous lessons, the teacher often verbalized while the student was playing, which accounts for a total percentage of time over 100%.

Table 5. Student 1, Private Lesson 3 Scribe Data: Rose; *40 Etudes*, #1, Measure 1 and Debussy; *Première Rhapsodie*, 13 Measures After Rehearsal 5 – 19 Measures After Rehearsal 5

INTONATION	**Freq.**	**Rate/Min**	**Time**	**% Time**	**Mean**	**SDev**
Teacher Verbalization	23	4.566	03:23.5	67.35	00:08.8	8.98
Teacher Plays	0	0.000	00:00.0	0.000	00:00.0	0.00
Teacher Approximation	3	0.5956	00:05.8	1.926	00:01.9	0.54
Student Verbalization	20	3.970	00:44.4	14.70	00:02.2	1.48
Student Plays	7	1.390	01:16.4	25.31	00:10.9	5.75
Student Approximation	0	0.000	00:00.0	0.000	00:00.0	0.00

During the third self-guided practice session there were five behaviors and SCRIBE data is reported in table six. The student played slowly with a tuner for 52.81% of the time, played as printed 5.937% of the session and spent 3.202% adjusting her instrument. The student also spent 37.64% of the session on non-practice related behaviors and made 39 repetitions at a rate of 5.975 per minute.

Table 6. Student 1, Self-Guided Practice Session 3 Scribe Data: Galper; *Tone, Technique, and Staccato*

	Freq.	**Rate/Min**	**Time**	**% Time**	**Mean**	**SDev**
Plays as Printed	3	0.4583	00:23.3	5.937	00:07.7	6.10
Slowly With Tuner	8	1.222	03:27.4	52.81	00:25.9	38.05
Adjusts Instrument	2	0.3055	00:12.5	3.202	00:06.2	2.34
Repetition	39	5.957	NA	NA	NA	NA
Non-Practice Related	5	0.7638	02:27.8	37.64	00:29.5	48.63

STUDENT 2

Student two was an undergraduate student who had had more than four semesters of applied lessons and SCRIBE data for teacher and student behavior from the first private lesson is reported in table seven. In the first lesson the target was tone quality and the primary teacher behavior was verbalizations, which accounted for 53.51% of the lesson; the teacher also spent 5.211% of the lesson making performance approximations. The primary student behavior was playing, which occurred during 42.42% of the lesson, followed by student verbalization, which occurred 6.225% of the time. The student also made two short performance approximations, which accounted

for 0.4857% of lesson. The percentage of time used in the lesson is greater than 100% due to the fact that the teacher often verbalized and made performance approximations while the student was playing.

Table 7. Student 2, Private Lesson 1 Scribe Data: Corigliano; *Clarinet Concerto*, Opening Section

TONE QUALITY	**Freq.**	**Rate/Min**	**Time**	**% Time**	**Mean**	**SDev**
Teacher Verbalization	50	4.835	05:32.0	53.51	00:06.6	11.08
Teacher Plays	0	0.000	00:00.0	0.000	00:00.0	0.00
Teacher Approximation	12	1.160	00:32.3	5.211	00:02.6	1.34
Student Verbalization	23	2.224	00:38.6	6.225	00:01.6	1.85
Student Plays	18	1.740	04:23.2	42.42	00:14.6	27.93
Student Approximation	2	0.1934	00:03.0	0.4857	00:01.5	0.13

The student exhibited five different behaviors during his first self-guided practice session and SCRIBE data is reported in table eight. The primary behavior was playing as printed, which occurred during 79.89% of the session. The student also created an exercise based on difficult intervals from the passage for 9.987% of the session, spent 3.668% of the time playing the piano and clarinet simultaneously, and 6.021% of the session on non-practice related behaviors. The student also performed 68 repetitions at a rate of 7.702 per minute.

Table 8. Student 2, Self-Guided Practice Session 1 Scribe Data: Corigliano; *Clarinet Concerto*, Opening Section

	Freq.	**Rate/Min**	**Time**	**% Time**	**Mean**	**SDev**
Plays as Printed	17	1.925	07:03.2	79.89	00:24.8	19.37
Interval Exercise	7	0.7928	00:52.9	9.987	00:07.5	5.30
Plays With Piano	1	0.11333	00:19.4	3.668	00:19.4	0.00
Repetition	68	7.702	NA	NA	NA	NA
Non-Practice Related	11	1.246	00:31.8	6.021	00:02.8	1.61

During the second private lesson the target the teacher worked on was interpretation and SCRIBE data is reported in table nine. The primary teacher behavior was verbalizing, which occurred during 47.65% of the lesson; the teacher also made performance approximations 1.721% of the time. The primary student behavior was playing, which accounted for 41.69% of the lesson and the student also verbalized during 14.62% of the lesson. The percentage of time is greater than 100% during lesson two because the teacher often verbalized while the student was playing.

Table 9. Student 2, Private Lesson 2 Scribe Data: Corigliano; *Clarinet Concerto*, Opening and Second Cadenza

INTERPRETATION	**Freq.**	**Rate/Min**	**Time**	**% Time**	**Mean**	**SDev**
Teacher Verbalization	20	2.176	04:22.7	47.65	00:13.1	14.56
Teacher Plays	0	0.000	00:00.0	0.000	00:00.0	0.00
Teacher Approximation	4	0.4352	00:09.4	1.721	00:02.3	1.23
Student Verbalization	25	2.720	01:20.6	14.62	00:03.2	3.91
Student Plays	6	0.6528	03:49.9	41.69	00:38.3	55.21
Student Approximation	0	0.000	00:00.0	0.000	00:00.0	0.00

During the second self-guided practice session the student demonstrated five different behaviors. The student played as printed 44.34% of the time and spent 43.58% of the time playing under tempo. The student played a tremolo exercise based on difficult intervals from the passage for 2.807% of the time and spent 8.779% of the session on non-practice related behaviors. The student also made 30 repetitions at a rate of 4.274 per minute; SCRIBE data is reported in table ten.

Table 10. Student 2, Self-Guided Practice Session 2 Scribe Data: Corigliano; *Clarinet Concerto*, Opening Section

	Freq.	**Rate/Min**	**Time**	**% Time**	**Mean**	**SDev**
Plays as Printed	10	1.425	03:06.6	44.34	00:18.6	14.59
Plays Under Tempo	9	1.283	03:03.4	43.58	00:20.3	15.20
Tremolo Exercise	1	0.1425	00:11.8	2.807	00:11.8	0.00
Repetition	30	4.274	NA	NA	NA	NA
Non-Practice Related	12	1.710	00:36.9	8.779	00:03.0	1.56

The teacher focused on the target of interpretation during the third private lesson and SCRIBE data is reported in table eleven. The teacher spent 40.86% of the lesson verbalizing, 13.20% playing and 0.6634% making performance approximations. The student played during 39.19% of the lesson and verbalized 14.99% of the time. The percentage of time during the lesson exceeds 100% because the teacher often verbalized while the student was playing.

Table 11. Student 2, Private Lesson 3 Scribe Data: Corigliano; *Clarinet Concerto*, Opening Section

INTERPRETATION	**Freq.**	**Rate/Min**	**Time**	**% Time**	**Mean**	**SDev**
Teacher Verbalization	38	3.753	04:08.1	40.86	00:06.5	8.32
Teacher Plays	15	1.482	01:20.1	13.20	00:05.3	3.53
Teacher Approximation	2	0.1975	00:04.0	0.6634	00:02.0	0.04
Student Verbalization	22	2.173	01:31.0	14.99	00:04.1	5.53
Student Plays	14	1.383	03:58.0	39.19	00:17.0	12.82
Student Approximation	0	0.000	00:00.0	0.000	00:00.0	0.00

During the third self-guided practice session, the student exhibited seven different behaviors; SCRIBE data is reported in table twelve. The student spent 53.39% of the session playing as printed and 18.84% of the time playing the passage without the register key, which transposed the passage down a twelfth. Blowing while fingering, without sound, accounted for 7.199% of the session and the student spent 6.365% of the time playing only the attacks of each phrase. The student also tongued the eighth note subdivision of the passage for 7.454% of the session and spent 5.991% of the time on non-practice related behaviors. There were 37 repetitions made during the session at a rate of 5.174 per minute. The passage selected for analysis from the third self-guided practice session was different from the passage selected for analysis from the third private lesson because there were no pieces in common between the two sessions.

Table 12. Student 2, Self-Guided Practice Session 3 Scribe Data: Mozart; *Clarinet Concerto*, Opening Section

INTERPRETATION	**Freq.**	**Rate/Min**	**Time**	**% Time**	**Mean**	**SDev**
Plays as Printed	10	1.398	03:49.0	53.39	00:22.0	18.53
Blows While Fingering	4	0.5594	00:30.8	7.199	00:07.7	5.42
Without Register Key	7	0.9789	01:20.8	18.84	00:11.5	7.95
Attacks Only	1	0.1398	00:27.3	6.365	00:27.3	0.00
Tongues Subdivisions	2	0.2797	00:31.9	7.454	00:15.0	6.99
Repetition	37	5.174	NA	NA	NA	NA
Non-Practice Related	11	1.538	00:25.7	5.991	00:02.3	1.16

STUDENT 3

Student three was graduate student and SCRIBE data from the first private lesson, reporting teacher and student behavior, is in table thirteen. The target during this lesson was breathing and the teacher only demonstrated one behavior, verbalizations, which accounted for 15.51% of the lesson. The student spent 62.07% of the lesson playing and 20.53% of the time verbalizing.

Table 13. Student 3, Private Lesson 1 Scribe Data: Mozart; *Clarinet Concerto*, First Movement Exposition

BREATHING	**Freq.**	**Rate/Min**	**Time**	**% Time**	**Mean**	**SDev**
Teacher Verbalization	12	1.642	01:08.0	15.51	00:05.6	7.03
Teacher Plays	0	0.000	00:00.0	0.000	00:00.0	0.00
Teacher Approximation	0	0.000	00:00.0	0.000	00:00.0	0.00
Student Verbalization	11	1.505	01:30.0	20.53	00:08.1	13.11
Student Plays	2	0.2737	04:32.1	62.07	02:16.0	91.18
Student Approximation	0	0.000	00:00.0	0.000	00:00.0	0.00

There were seven different behaviors used during the student's first self-guided practice session and SCRIBE data is reported in table fourteen. The primary behavior was non-practice related behavior, which occurred during 32.68% of the session with a mean duration of 00:06.4 seconds. The student also spent 17.23% of the session playing the passage on one note, 15.83% playing while laying on her back, 17.48% of the lesson playing slurred, 14.34% playing while bent over, and 2.188% playing a gliss exercise. The data show that the time the student spent on each behavior ranged from 01:02.2 – 01:15.9 minutes. The student also made 14 repetitions at a rate of 1.934 per minute.

Table 14. Student 3, Self-Guided Practice 1 Scribe Data: Mozart; *Clarinet Concerto*, First Movement, First Three Lines

	Freq.	**Rate/Min**	**Time**	**% Time**	**Mean**	**SDev**
Plays on One Note	4	0.5526	01:14.8	17.23	00:18.7	11.73
Plays Laying On Back	6	0.8289	01:08.7	15.83	00:11.4	5.14
Plays Slurred	8	1.105	01:15.9	17.48	00:09.4	4.95
Plays Bent Over	6	0.8289	01:02.2	14.34	00:10.3	4.20
Gliss Exercise	2	0.2763	00:09.5	2.188	00:04.7	0.01
Repetition	14	1.934	NA	NA	NA	NA
Non-Practice Related	22	3.039	02:21.9	32.68	00:06.4	7.06

During the second private lesson the teacher again selected the target of breathing. The SCRIBE data are reported in table fifteen and shows that the teacher spent 64.50% of the time verbalizing and 7.622% of the time making performance approximations. The primary student behavior was playing, which occurred during 18.04% of the lesson. The student also verbalized 6.837% of the time and made performance approximations 2.714% of the time.

Table 15. Student 3, Private Lesson 2 Scribe Data: Mozart; *Clarinet Concerto*, First Movement, First Three Lines

BREATHING	**Freq.**	**Rate/Min**	**Time**	**% Time**	**Mean**	**SDev**
Teacher Verbalization	17	2.134	05:08.3	64.50	00:18.1	24.92
Teacher Plays	0	0.000	00:00.0	0.000	00:00.0	0.00
Teacher Approximation	5	0.6275	00:36.4	7.622	00:07.2	5.70
Student Verbalization	12	1.506	00:32.6	6.837	00:02.7	3.17
Student Plays	4	0.5020	01:26.2	18.04	00:21.5	11.82
Student Approximation	1	0.1255	00:12.9	2.714	00:12.9	0.00

During the second self-guided practice session the student demonstrated eight distinct behaviors. The primary behavior was non-practice related behavior, which occurred 36.90% of the time, but the student also spent 21.21% of the time playing as printed, 11.48% playing a long tone, 9.953% playing a long tone while moving her arm, 8.450% playing the passage completely slurred, 5.403% playing the passage on one note, and 1.821% stretching. The student also made 15 repetitions at a rate of 1.428 per minute; SCRIBE data is reported in table sixteen. As during the first self-guided practice session, the student used many different behaviors for short amounts of time during the second self-guided practice session.

Table 16. Student 3, Self-Guided Practice 2 Scribe Data: Mozart; *Clarinet Concerto*, First Movement, First Two Lines

	Freq.	**Rate/Min**	**Time**	**% Time**	**Mean**	**SDev**
Plays as Printed	21	2.000	02:51.4	27.21	00:8.1	6.28
Plays on One Note	3	0.2857	00:34.0	5.403	00:11.3	6.65
Plays Slurred	4	0.3809	00:53.2	8.450	00:13.3	5.21
Stretching	1	0.09523	00:11.4	1.821	00:11.4	0.00
Long Tone With Arm	1	0.09523	01:02.7	9.953	01:02.7	0.00
Long Tone	3	02857	01:12.3	11.48	00:24.1	8.55
Repetition	15	1.428	NA	NA	NA	NA
Non-Practice Related	24	2.285	03:52.4	36.90	00:09.6	7.57

During the student's third private lesson, SCRIBE data reported in table seventeen, the teacher focused on the target of interpretation. The primary teacher behavior was verbalization, which occurred during 50.16% of the lesson. The teacher also made performance approximations for 12.82% of the lesson and teacher playing accounted for 7.997% of the time. The student spent 24.20% of the lesson playing and 16.79% of the time verbalizing. The percentage of time during the third private lesson is greater than 100% because the teacher often verbalized, played, and made performance approximations while the student was playing.

Table 17. Student 3, Private Lesson 3 Scribe Data: Mozart; *Clarinet Concerto*, First Movement, First Two Lines

INTERPRETATION	**Freq.**	**Rate/Min**	**Time**	**% Time**	**Mean**	**SDev**
Teacher Verbalization	32	4.736	03:23.3	50.16	00:06.3	6.08
Teacher Plays	4	0.5921	00:32.4	7.997	00:08.1	5.26
Teacher Approximation	5	0.7401	00:51.9	12.82	00:10.3	4.71
Student Verbalization	26	3.848	01:08.0	16.79	00:02.6	2.64
Student Plays	11	1.628	01:38.0	24.20	00:08.9	4.88
Student Approximation	0	0.000	00:00.0	0.000	00:00.0	0.00

The student exhibited six different behaviors during the third self-guided practice session; SCRIBE data is reported in table eighteen. The primary student behavior was playing as printed, which accounted for 42.07% of the session. The student also spent 17.93% of the time playing the selection under tempo, 13.52% of the time varying the rhythm of technical passages, and 11.06% of the time tonguing the passage on one note; non-practice related behavior accounted for 14.83% of the session. The student also made 81 repetitions at a rate of 13.83 per minute.

Table 18. Student 3, Self-Guided Practice Session 3 Scribe Data: Mozart; *Clarinet Concerto*, First Movement, First Three Lines

	Freq.	**Rate/Min**	**Time**	**% Time**	**Mean**	**SDev**
Plays as Printed	12	2.049	02:27.7	42.07	00:12.3	12.77
Plays Under Tempo	7	1.196	01:03.0	17.93	00:09.0	4.60
Tongues on One Note	6	1.025	00:38.8	11.06	00:06.4	4.11
Varies Rhythm	2	0.3416	00:47.5	13.52	00:23.7	6.61
Repetition	81	13.83	NA	NA	NA	NA
Non-Practice Related	15	2.562	00:52.1	14.83	00:03.4	1.99

EXIT INTERVIEW RESPONSES

Selected responses from students' exit interviews are reported in table nineteen. Interview questions that were answered with extended prose were omitted from the table, however complete transcripts from all student exit interviews may be found in appendix D. The responses show that although the students often used similar practice strategies, and all used the tuner and metronome, the intent governing their actions

varied. For example using the tuner varied from helping adjust the clarinet itself to training the student's ear to recognize in tune playing, although related, the difference intent illustrates how similar behavior can serve different purposes to different students.

Table 19. Exit Interview Responses

	Student 1	**Student 2**	**Student 3**
What is your current age?	19	21	23
How long have you played the clarinet?	8 years	10 years	11 years
At what age did you begin playing the clarinet?	11	11	12
How long have you taken private lessons?	4 years	8 years	9 years
Do you feel like you improve when you practice?	"Usually."	"Generally, yes."	"I've been frustrated …I feel like the key is to practice in more creative ways…"
Do you incorporate scales, exercises, or etudes in your practice routine?	"I try to."	"When I need them, I do them."	"Yes…I've been using them lately to help with sight reading…"
Do you audiotape your practice for later review? If so, why?	"Yes, I record for review in the moment."	"Occasionally, but not frequently."	"Yes, so I can hear things I might not hear while playing."
Do you use a metronome? How and for what purpose?	"Yes…I set it to a slower tempo, then gradually get faster…"	"…I use the metronome as a kind of crutch I slowly take away."	"Yes, it helps me know if I'm in tempo."
Do you use a tuner? How and for what purpose?	"Yes. After I warm up I use it to adjust my instrument…"	"When I have a note that sounds out of place."	"Yes, it helps to me to listen to if I'm in tune or not."
Do you sing or speak during your practice session? How does that help you?	"…Occasionally … to help with phrasing."	"Generally, no."	"Yes…I sing for rhythm…and speak for phrasing…"

CHAPTER V. DISCUSSION

STUDENT 1

PRIVATE LESSON 1 / SELF-GUIDED PRACTICE SESSION 1

The portion of Debussy's *Première Rhapsodie* that the teacher worked on during the private lessons occurs during the middle of the piece and the teacher's verbalizations and performance approximations, which consisted of singing and gesturing while singing, often took place while the student was playing. As the teacher and the student worked on the selection the teacher provided feedback and performance directives to the student through both performance approximations and verbalizations, which took place as a reaction to the student's performance trials. The teacher made numerous interventions and as soon as the student made an error, the teacher made an intervention.

During the student's self-guided practice session the student worked on the same passage as during the private lesson. The student spent 63.36% of the time playing the music as printed, 19.20% singing parts of the passage while fingering, and 6.374% was spent articulating on one note. Non-practice related behaviors accounted for 10.74% of the session, which although a bit high, the practice was intense and focused the breaks served to give the student rest between practice sequences. Because this selection actually began the student's self-guided practice session, it seems that the student integrated the teacher's approach from the private lesson. The student repeated the passages 108 times at a rate of 12.46 times per minute, with a consistent pattern of singing followed by several playing repetitions, which suggests that the student was comparing her playing to her singing, with the singing assuming the role that the teacher played during the private lesson.

PRIVATE LESSON 2/SELF-GUIDED PRACTICE SESSION 2

The passage from the second lesson is a long, slow, and legato melody. The teacher focused on the target of interpretation and spent most of his verbalizations describing the character of the music and giving the student feedback on her playing. The performance approximations that the teacher made consisted solely of playing the piano accompaniment, which often occurred while the student was playing. The primary student behavior was playing, which accounted for 26.97% of the lesson. Student verbalizations took 21.67% of the lesson and aside from short answers and acknowledging the teachers descriptions, consisted primarily of asking technical questions. As in lesson 1, the teacher provided performance directives to the student through verbalizations and performance approximations, which were all reactions to the student's performance.

The student's self-guided practice had just three behaviors; playing as printed, repetitions and non-practice related behaviors, which consisted of changing playing positions and drinking water. The passage the student worked on, while not an identical portion from the lesson, has the same melody, in the same register, occurring later in the piece. The student spent 84.66% of the session playing the passage as printed and 14.95% of the session was spent on non-practice related behavior. The student also repeated passages 33 times at a rate of 5.349/minute. Because the only practice strategy that the student demonstrated was repetition, the results indicate that the student simply went back and repeated a passage when there was a problem. While the repetitions did occur frequently, the student did not appear to identify any fundamental flaws or isolate specific segments of the music that could have triggered her repetitions in the first place.

PRIVATE LESSON 3/SELF-GUIDED PRACTICE SESSION 3

This lesson was the final lesson of the semester for the student so most of the time was spent planning repertoire and chamber music opportunities for the coming semester, which explains why the teacher spent such a large portion of the lesson verbalizing. However, the teacher did focus on intonation for a portion of the lesson and instructed the student to play with a tuner slowly and alternate between playing while looking at the tuner and playing while looking away. The teacher also used the piano as a pitch reference while the student played. The student's playing focused on intonation and her verbalizations consisted of conveying her experience of intonation as they worked.

In the student's self-guided practice, the selection of music was different than the selection worked on during the private lesson. However, the student spent most of the session playing slowly with the tuner, which indicates that the student was working on the same fundamental concept as the teacher worked on during the private lesson, just in a different passage of music. As the student worked, there were 39 repetitions made at a rate of 5.957/minute, which shows that the student stopped frequently to repeat material if it didn't register as in-tune with her tuner. The student also spent 37.64% of the time on non-practice related behaviors such as breaking in reeds. Although that process is indeed time consuming, the student could develop a system to prepare new reeds for performance more efficiently. It should be noted that intonation is a delicate aspect of clarinet playing and new reeds are often not stable enough for reliable work in this domain.

STUDENT 2

PRIVATE LESSON 1/SELF-GUIDED PRACTICE SESSION 1

The Corigliano Clarinet Concerto is a wildly virtuosic contemporary piece, which provides a lot of expressive freedom to the performer. During the first private lesson the teacher's verbalizations served to give feedback after the student's playing and to describe how to vary tone colors in the music, which worked to help clarify the student's interpretation of the piece. The student's primary behavior was playing, which accounted for 42.42% of the lesson time. While the student did spend a small portion of the lesson interacting with the teacher verbally, the student primarily demonstrated his understanding of the teacher's verbalizations through performance.

During the self-guided practice session, 79.89% of the time was spent with the student playing the music as printed. This mirrors the student's behavior from the private lesson; this student likes to play. When the student encountered a difficult passage, he isolated the difficult interval and created an exercise. The student started on a note and expanded the interval diatonically during this exercise, which accounted for 9.987% of the session. Non-practice related behavior accounted for just 6.021% of the session and primarily served as short breaks from practice. The student also made many repetitions, 68 over the course of the session, and they were focused directly on the intervals that caused errors in the student's performance. The data show that this student played for the majority of the practice session in a way that mimicked an actual performance situation. When a problem was encountered, the student stopped, went directly to the difficult interval, and created an exercise or repeated the difficult interval or passage several times. Then the student would put the passage back into context, which seems to indicate the he was testing whether or not his practice strategies were working.

PRIVATE LESSON 2/SELF-GUIDED PRACTICE SESSION 2

During the second private lesson the teacher spend most of the time 47.65% of the lesson verbalizing and all verbalizations were centered on the target of interpretation and consisted primarily of questions and statements to clarify the arrival points in the student's performance. The teacher also infrequently demonstrated with performance approximations, which consisted of singing only. The student again, spent a large portion of the lesson playing and only 14.62% verbalizing. The student generally played first the passage a section at a time and after each play, the teacher would lead a discussion about the performance, which was followed by the next student play. This strategy seemed to fit the student well, since the student liked to demonstrate comprehension through performance.

During the self-guided practice session the student demonstrated a nearly equal distribution of time between playing the selection as printed and playing the selection under tempo. The student played a section from the passage at performance tempo, under tempo, and then back at performance tempo; a cycle that continued throughout the selection. The student also spent 2.807% of the session on a tremolo exercise, which consisted of performing a tremolo between an interval after a mistake and non-practice related behaviors accounted for 8.779% of the lesson. There were also 30 repetitions, at a rate of 4.274/minute, in this selection but most occurred during the student's performance tempo – under tempo – performance tempo cycles.

PRIVATE LESSON 3/SELF-GUIDED PRACTICE SESSION 3

During the third private lesson the teacher focused on the target of interpretation. The teacher spent 40.86% of the time verbalizing and 13.20% of the time playing. The main purpose of the teacher's verbalizations and modeling on the clarinet was to

illustrate features of the student's performance that the teacher wanted to change. This was the first occurrence of teacher playing during any of the private lessons because the teacher broke his hand while vacationing on his yacht; so the teacher was unable to play for several weeks during the observation period. The student verbalized for 14.99% of the lesson, which consisted of responding to the teacher's verbalizations as well as explaining his musical choices but the primary student behavior was playing, which accounted for 39.19% of the lesson. In this lesson the student played a section from the piece and then the teacher guided him through it again, making suggestions the second time through verbalizations and modeling.

During the student's self-guided practice session it was not possible to select the same piece, or a piece that was closely related to the piece worked on during the private lesson. The student won a competition playing the piece from the lesson, and then took a break from working on it since the performance was several weeks away. Because of this, the opening of Mozart's Clarinet Concerto was chosen for observation. The student spent 53.39% of the session playing the music as printed, which is always how the student began. When a problem was encountered in the music, the student used four different practice strategies before trying the passage again as printed. The practice strategies were blowing while fingering, which used 7.199% of the session, playing without the register key, which used 18.84% of the session, playing the first notes of each slur (attacks only), which accounted for 6.365% of the session, and finally tonguing the subdivisions, which used 7.454% of the session. The student also used 37 repetitions at a rate of 5.174/minute, both during times when he was playing as printed and during times when he was using a practice strategy. Non-practice related behaviors took 5.991% of the lesson and were generally in the form of short breaks between plays. The student had a metronome running during the entirety of this session and the tempo

never varied. All of the practice strategies the student used during this session served to reduce difficultly as the student worked and the student only used these strategies after an error occurred.

STUDENT 3

PRIVATE LESSON 1/SELF-GUIDED PRACTICE SESSION 1

The only behavior that the teacher demonstrated in the selection from the first lesson was verbalization, which accounted for 15.51% of the time. The teacher's verbalizations were primarily questions that encouraged the student to describe her experience of the target of breathing after playing the passage; any directives he gave were responses to her answers to his questions. The primary student behavior was playing, which used 62.07% of the lesson and student verbalizations occurred 20.53% of the time. The student played the selection, then changed chairs and played a portion of it again. Then the teacher asked her about her experience and she described her practice habits as well as what she believed were her primary problems. The teacher's verbalizations served to remind the student that responding to circumstances as they occur, both in performance and in practice, is the goal rather than being error free. The teacher focused on the student's problem solving strategy throughout the private lesson.

During the student's self-guided practice session there were many behaviors exhibited. The student spent 17.23% of the session playing the passage on one note, 15.83% playing on her back, 17.48% playing without articulation, 14.34% playing bent over and 2.188% on a gliss exercise. There were just 14 repetitions at a rate of 1.934/minute and 32.68% of the session was spent on non-practice related behaviors such as changing position and sitting motionlessly. The student alternated playing with and without the metronome, each occurring about half of the session. The many

behaviors demonstrated coupled with few repetitions indicate that this student tends to change everything after a mistake. When an error occurred, the student tried something completely different, rather than going to the precise difficulty and working on that. Each practice behavior lasted about a minute and it seems that an inadequate amount of time was allowed for each behavior.

PRIVATE LESSON 2/SELF-GUIDED PRACTICE SESSION 2

During the private lesson the teacher verbalized 64.50% of that the time and spent 7.622% of the lesson demonstrating via performance approximations. The teacher again focused on the target of breathing. The teacher's verbalizations primarily served to evaluate the student's self-guided practice strategies, rather than directly evaluating the student's performance. After the student's initial play of the segment of the Mozart Concerto, the teacher used subsequent student performances to guide the student through practice strategies that would translate into effective self-guided practice. The primary student behavior during the lesson was playing, which accounted for 18.04% of the lesson. The student verbalized in 6.837% of the time and demonstrated her intent via performance approximations, which consisted of singing. The teacher focused, as in lesson one, on talking the student through practice strategies that would help the student structure her practice time more effectively.

During the student's self-guided practice session the student demonstrated many behaviors, all for a short amount of time. The primary practice behavior the student demonstrated was playing as printed for 27.21% of the session. The student also played the passage on one note, played the passage without articulation, stretched, played a long tone, and played a long tone with an arm, which was used to regulate the amount of air that the was using while she played. The student also performed 15 repetitions at

a rate of 1.428 per minute. However, the primary use of time during the practice session was non-practice related behaviors, which accounted for 36.90% of the practice session. Most of the non-practice related behaviors consisted of changing reeds and sitting motionlessly. The behaviors that the student demonstrated could all be used to work on breathing, the target from the private lesson, but the student seemed to move from behavior to behavior without giving any one practice technique an opportunity to effect change in her performance.

PRIVATE LESSON 3/SELF-GUIDED PRACTICE SESSION 3

During the private lesson the teacher focused on interpretation and verbalized for 50.16% of the lesson. However, in this lesson verbalizations focused directly on the music. The teacher also played 7.997% of the time and demonstrated for 12.82% of the lesson. The student, on the other hand, played 24.20% of the time and student verbalizations occurred during 16.79% of the lesson. What was different in this lesson from the others with this student is that all of the teacher's behaviors were focused on illustrating specific elements of the piece for the student to work on.

The student's self-guided practice session was drastically different from the others for this student. The student spent 42.07% of the session playing as printed and demonstrated the following practice strategies: playing the passage under tempo, articulating the passage on one note, varying the rhythm of difficult sections of the passage, and repetitions. During this session the student stopped quickly after errors, went directly to problem intervals, and created exercises based on the difficult intervals. Perhaps the most striking differences observed during this practice session were the use of repetition and non-practice related behaviors. The student made 81 repetitions at a rate of 13.83 per minute, which shows that the student worked in small sections and

repeated difficult intervals many times. Non-practice related behaviors accounted for 14.83% of the session, which was considerably less than during previous practice sessions.

CONCLUSION

The results show that there are differences between the behaviors demonstrated during a private lesson and the behaviors demonstrated during a self-guided student practice session. In all lessons the teacher used verbalizations to explain key concepts related to the selected target and the teacher always related specific feedback to broad overarching concepts the students could apply to a variety of settings. Students one and two all spent more time playing during their practice session and while they indeed incorporated the material the teacher focused on during their lessons, they seemed to work to solidify their performances rather than to explore new territory. Student three on the other hand tended to experiment more often, especially during practice sessions one and two, but there was a negative effect on the performance. Further research that examines the relationship between behaviors during a private lesson and achievement during self-guided practice is needed to determine the effect private lesson behavior on successful self-guided student practice.

Student three best illustrates the factors that mediate the differences between behavior in a private lesson and a self-guided practice session in the present study. In the third private lesson the teacher focused on specific elements of the piece rather than on broad concepts, which resulted in more effective self-guided student practice. This suggests that students are more able to translate specific feedback into effective practice strategies. When using broad conceptual descriptions during private lessons, there is a greater risk that students won't be able to apply those concepts in a way that improves

their performance. A study that examines the relationship between broad and specific performance directives during a private lesson and their effect on student behavior during self-guided practice could help clarify the relationship.

The results do not suggest that additional lessons affect the relationship between teacher and student behavior during a private lesson with student behavior during self-guided practice. The three levels of students represented in this study did not demonstrate self-guided practice behavior that seemed to improve or change over the course of the study. It's likely that observations would either have to continue for longer than three lessons and practice session to observe this change, if present.

The most drastic change in practice stemmed from the change in instruction during the third lesson of student three. When the feedback and performance directives were specific and focused on the music, the student's practice was more focused and effective.

The responses from the student exit interviews do reflect that depth of understand and justification of practice behaviors becomes more involved as the length of study increases. The student who had studied the longest amount of time gave the most complicated responses and the student who had studied the shortest amount of time gave responses that were the most simple. Further research that explores students' perceptions of and intent during their self-guided practice sessions may provide additional insight into how intent affects the perception of achievement.

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APPENDIX A. STUDENT PARTICIPANT RECRUITMENT SCRIPT

RECRUITMENT SCRIPT FOR "A COMPARISION OF TEACHER-GUIDED INSTRUCTION AND SELF-GUIDED STUDENT PRACTICE STRATEGIES"

Hello. My name is Spencer Prewitt and I am recruiting student participants for my research study "A Comparison of Teacher-Guided Instruction and Self-Guided Student Practice Strategies". This study will focus on comparing student behavior during a series of teacher-guided private lesson and self-guided practice sessions.

The key questions that this study will address are:

1. Is there a measureable difference in student behavior in a teacher-guided private lesson and student behavior in a self-guided practice session?
2. Does this difference, if present, vary depending on academic level?
3. Do additional lessons affect this relationship?

If you agree to participate you will be asked to videotape a series of teacher-guided private lessons and one hour of self-guided practice during the week following each private lesson. I will provide a video camera to you and instruct you on how to record your lessons and practice sessions. You will be required to return the camera to me at the conclusion of the study. After all the videos have been collected, I will conduct a thirty-minute verbal exit interview with you at a mutually agreed upon location on the Bowling Green State University campus, which will be audio recorded. The total added time commitment for participation in this study would be approximately thirty minutes. The videotaping of lessons and practice sessions will not add an additional time commitment beyond what is already required for your degree program.

Please note that your participation is completely voluntary. You are free to withdraw at any time. You may decide to skip questions (or not do a particular task) or discontinue participation at any time without penalty. Deciding to participate or not will not affect your grades, class standing, relationship with Bowling Green State University, your teacher or me.

The risks of participation are no greater than daily life and steps will be taken to maintain participant confidentiality.

I will distribute a consent form that outlines study and the procedures that will be used when collecting and storing data. If you are interested in participating or if you have further questions, please contact me by email at spencep@falcon.bgsu.edu or telephone at 816-813-4153 and we will mutually decide on a meeting time and place, on the Bowling Green State University campus to complete your consent form. Thank you for your time.

APPENDIX B. INFORMED CONSENT FORMS

TEACHER PARTICIPANT INFORMED CONSENT FORM

BGSU®
BOWLING GREEN STATE UNIVERSITY
College of Musical Arts

Teacher Participant Informed Consent for "**A Comparison of Teacher-Guided Instruction and Self-Guided Student Practice Strategies"**

Introduction: My name is Spencer Prewitt and I am a Doctor of Musical Arts student in the Bowling Green State University College of Musical Arts under the advisement of Professor Kevin Schempf. My research topic for my final document is "**A Comparison of Teacher-Guided Instruction and Self-Guided Student Practice Strategies".** You are being asked to participate in my research because you are the artist teacher of clarinet at Bowling Green State University.

Purpose: The purpose of my research will be comparing student behavior in a series of teacher-guided lessons and subsequent self-guided practice sessions. The key questions that my study will seek to answer are:

1. Is there a measureable difference in student behavior in a teacher-guided private lesson and student behavior in a self-guided practice session?
2. Does this difference, if present, vary depending on academic level?
3. Do additional lessons affect this relationship?

Although there are no direct benefits to you, this project will be beneficial to clarinet pedagogy in general by providing information to both teachers and students about behavior in private lessons and student practice sessions. That information could help maximize efficiency and productivity in teacher-guided lessons and self-guided student practice.

Procedure: If you agree to participate you will be asked to allow your students to videotape a series of teacher-guided private lessons. I do not anticipate any added time commitment for participation in this study.

Voluntary nature: Your participation is completely voluntary. You are free to withdraw at any time. You may decide to skip questions (or not do a particular task) or discontinue participation at any time without penalty. Deciding to participate or not will not affect your relationship with Bowling Green State University or the researcher.

Confidentiality Protection: All video data will be transferred from the camera and stored on my personal computer in a password-protected folder. Once transferred, the video data will be deleted from the camera. The physical copy of the consent form will be scanned and stored in a password-protected folder on my personal computer; the physical copy will be destroyed as soon as the electronic copy is created. Access to these files will be limited to my doctoral committee and me. No names will be used in the published version of the study and participants will be referred to by number to ensure confidentiality. However, I may quote excerpts from the videotaped lessons in my published paper, which provides a chance of being recognized.

Risks: The risks of participation are no greater than daily life; however, please refer to the paragraph concerning confidentiality protection for details concerning my safeguards against a breach of confidentiality.

Contact information: If you have any questions about this study in general, or your participation please do not hesitate to contact me.

Principal Investigator: Spencer Prewitt, spencep@falcon.bgsu.edu or 816-813-4153
Project Advisor: Kevin Schempf, Schempf@bgsu.edu or 419-372-2392

You may also contact the Chair, Human Subjects Review Board at 419-372-7716 or hsrb@bgsu.edu, if you have any questions about your rights as a participant in this research. Thank you for your time.

I have been informed of the purposes, procedures, risks and benefits of this study. I have had the opportunity to have all my questions answered and I have been informed that my participation is completely voluntary. I agree to participate in this research.

_____
Participant Signature

STUDENT PARTICIPANT CONSENT FORM

BGSU
BOWLING GREEN STATE UNIVERSITY
College of Musical Arts

Student Participant Informed Consent for "**A Comparison of Teacher-Guided Instruction and Self-Guided Student Practice Strategies"**

Introduction: My name is Spencer Prewitt and I am a Doctor of Musical Arts student in the Bowling Green State University College of Musical Arts under the advisement of Professor Kevin Schempf. My research topic for my final document is "**A Comparison of Teacher-Guided Instruction and Self-Guided Student Practice Strategies".** You are being asked to participate in my research because you are a member of the Bowling Green State University Clarinet Studio and are studying either Music Performance or Music Education.

Purpose: The purpose of my research will be comparing student behavior in a series of teacher-guided lessons and subsequent self-guided practice sessions. The key questions that my study will seek to answer are:

1. Is there a measureable difference in student behavior in a teacher-guided private lesson and student behavior in a self-guided practice session?
2. Does this difference, if present, vary depending on academic level?
3. Do additional lessons affect this relationship?

Although there are no direct benefits to you, this project will be beneficial to clarinet pedagogy in general by providing information to both teachers and students about behavior in private lessons and student practice sessions. That information could help maximize efficiency and productivity in teacher-guided lessons and self-guided student practice.

Procedure: In order to participate you must be at least eighteen years of age. If you agree to participate you will be asked to videotape a series of teacher-guided private lessons and one hour of self-guided practice during the week following each private lesson. I will provide a video camera to you and instruct you on how to record your lessons and practice sessions. You will be required to return the camera me at the conclusion of the study. After all the videos have been collected, I will conduct a thirty-minute verbal exit interview with you at a mutually agreed upon location on the Bowling Green State University campus, which will be audio recorded. The total added time commitment for participation in this study would be approximately thirty minutes. The videotaping of lessons and practice sessions will not add an additional time commitment beyond what is already required for your degree program.

Voluntary nature: Your participation is completely voluntary. You are free to withdraw at any time. You may decide to skip questions (or not do a particular task) or discontinue participation at any time without penalty. Deciding to participate or not will not affect your grades, class standing, relationship with Bowling Green State University, your teacher or the researcher.

Confidentiality Protection: All video data will be transferred from the camera and stored on my personal computer in a password-protected folder. Once transferred, the video data will be deleted from the camera. The audio data from the interview will be transferred to my personal computer in a password-protected folder on my personal computer. Once transferred, the audio data will be deleted from the recording device. The physical copy of the consent form will be scanned and stored in a password-protected folder on my personal computer; the physical copy will be destroyed as soon as the electronic copy is created. Access to these files will be limited to my doctoral committee and me. No names will be used in the published version of the study and participants will be referred to by number to ensure confidentiality. However, I may quote excerpts from the videotaped lessons, practice sessions or audio-recorded exit interview in my published paper, which provides a slight chance of being recognized.

Risks: The risks of participation are no greater than daily life; however, please refer to the paragraph concerning confidentiality protection for details concerning my safeguards against a breach of confidentiality.

Contact information: If you have any questions about this study in general, or your participation please do not hesitate to contact my advisor or me.

Principal Investigator: Spencer Prewitt, spencep@falcon.bgsu.edu or 816-813-4153
Project Advisor: Kevin Schempf, Schempf@bgsu.edu or 419-372-2392

You may also contact the Chair, Human Subjects Review Board at 419-372-7716 or hsrb@bgsu.edu, if you have any questions about your rights as a participant in this research. Thank you for your time.

I have been informed of the purposes, procedures, risks and benefits of this study. I have had the opportunity to have all my questions answered and I have been informed that my participation is completely voluntary and I am at least eighteen years of age. I agree to participate in this research.

_____
Participant Signature

APPENDIX C. HUMAN SUBJECTS REVIEW BOARD APPROVAL LETTER

BGSU
BOWLING GREEN STATE UNIVERSITY
Office of Research Compliance

DATE:	October 23, 2012
TO:	Spencer Prewitt, DMA
FROM:	Bowling Green State University Human Subjects Review Board
PROJECT TITLE:	[377043-2] A Comparison of Teacher-Guided Instruction and Self-Guided Student Practice Strategies
SUBMISSION TYPE:	Revision
ACTION:	APPROVED
APPROVAL DATE:	October 22, 2012
EXPIRATION DATE:	October 3, 2013
REVIEW TYPE:	Expedited Review
REVIEW CATEGORY:	Expedited review category # 7

Thank you for your submission of Revision materials for this project. The Bowling Green State University Human Subjects Review Board has APPROVED your submission. This approval is based on an appropriate risk/benefit ratio and a project design wherein the risks have been minimized. All research must be conducted in accordance with this approved submission.

The final approved version of the consent document(s) is available as a published Board Document in the Review Details page. You must use the approved version of the consent document when obtaining consent from participants. Informed consent must continue throughout the project via a dialogue between the researcher and research participant. Federal regulations require that each participant receives a copy of the consent document.

Please note that you are responsible to conduct the study as approved by the HSRB. If you seek to make any changes in your project activities or procedures, those modifications must be approved by this committee prior to initiation. Please use the modification request form for this procedure.

You have been approved to enroll 7 participants. If you wish to enroll additional participants you must seek approval from the HSRB.

All UNANTICIPATED PROBLEMS involving risks to subjects or others and SERIOUS and UNEXPECTED adverse events must be reported promptly to this office. All NON-COMPLIANCE issues or COMPLAINTS regarding this project must also be reported promptly to this office.

This approval expires on October 3, 2013. You will receive a continuing review notice before your project expires. If you wish to continue your work after the expiration date, your documentation for continuing review must be received with sufficient time for review and continued approval before the expiration date.

Good luck with your work. If you have any questions, please contact the Office of Research Compliance at 419-372-7716 or hsrb@bgsu.edu. Please include your project title and reference number in all correspondence regarding this project.

APPENDIX D. STUDENT EXIT INTERVIEW QUESTIONNAIRE

Exit Interview Questions for "A Comparison of Teacher-Guided Instruction and Self-Guided Student Practice Strategies."

1. What is your current age?
2. How long have you played the clarinet?
3. At what age did you begin playing the clarinet?
4. How long have you taken private lessons?
5. How did you learn to practice?
6. How do you typically spend your practice time?
7. How do you detect problems in your playing?
8. Do you feel like you improve when you practice?
9. Do you incorporate scales, exercises, or etudes in your practice routine?
10. How do you approach learning new repertoire?
11. What sort of planning do you do before you begin your practice?
12. Do you ever practice away from your instrument? If so, how?
13. Do you audiotape your practice for later review? If so, why?
14. Do you videotape your practice for later review? If so, why?
15. Do you use a metronome? How and for what purpose?
16. Do you use a tuner? How and for what purpose?
17. Do you sing or speak during your practice session? How does that help you?
18. Do you have anything else you'd like to share about practicing?

APPENDIX E. STUDENT EXIT INTERVIEW TRANSCRIPTS

STUDENT 1

Interviewer: What is your current age?
Student 1: 19 years old.

I: How long have you played the clarinet?
S1: 8 years.
I: So you started when?
S1: Age 11.
I: And that's 5th grade?
S1: 6th grade.
I: Is that when you school started band?
S1: Yes.
I: And you just started on clarinet?
S1: Yes, because we didn't have orchestra so I couldn't do violin.

I: When did you start taking private lessons?
S1: In 10th grade.
I: And who was your teacher?
S1: She was an adult with two music degrees from The University of Michigan and Arizona State.
I: Was she young or old?
S1: Middle aged.
I: Was she a local professional or did she teach band or something?
S1: I think she just mainly taught private lessons.

I: How did you learn to practice?
S1: I guess I learned that you have to review things because you can't just play it right the first time.
I: Did you learn that before you began taking private lessons?
S1: Yeah. I guess when I started playing violin when I was 5…
I: Oh, you played violin when you were five?
S1: Yeah, I guess that's when I learned how to practice. I didn't like to practice though. I mean I like practicing on clarinet but I didn't like practicing the violin. I don't know if it was because of my age…
I: Did you take Suzuki?
S1: Yes.
I: So you learned that you couldn't just play through; you had to do things more than once and that was it?
S1: Well I think not just that but also I knew I had to work on tone for example and to get rhythm you had to practice that. To learn how to make the piece more musical you had to practice it.

I: How do you typically spend your practice time?
S1: I usually warm up first.
I: What does that mean?

S1: I play long tones first, then some scales; it depends on how long I have to practice what I end up doing. Sometimes when I'm working on a solo like I was this semester then I would just focus on parts of the solo to get them better and if I'm trying to work on a concept like doing tuning, then I try to adopt it. First I do the tuning CD then I try to tune notes in a piece or an excerpt.
I: So you work on something isolated then you go to your repertoire and you try to bring what you learned in the isolated practice into that.
S1: I try to do that; not all the time.
I: That's good! That seems like to point of practicing to me.

I: How do you detect problems in your playing?
S1: Well, I guess if I can tell I'm not doing the rhythm correctly…
I: That's what I want to know; how do you tell?
S1: How do I tell? I guess I tell by…
I: What are you comparing it to?
S1: I guess I compare it to what I see the one the page and if they don't match up…
I: To what you imagine it would sound like.
S1: Yeah.
I: So you look at the page, then you imagine what that should sound like and then you compare that to what's coming out of your horn and if it doesn't match…
S1: Yeah but it's a split second thing.
I: Is that the only way?
S1: I also have used my recording device and a cassette sometimes.
I: So the same time of comparison but it's not happening in real time. Alright, I guess you've never thought about it before.
S1: [laughing] yeah.

I: Do you feel like you improve when you practice?
S1: Usually

I: Do you incorporate scales, exercises, or etudes in your practice routine?
S1: I try to. I mean I wish I did more etudes, but I think I will try to do that more next semester.
I: But like you said you warm up with long tone exercises and then scales.
S1: Yeah.

I: How do you approach learning new repertoire? So let's say you have a piece that you haven't done before…
S1: I haven't done that in a long time but I'm starting to a little bit. I guess I listen to a recording first.
I: Okay. Why?
S1: So I know how the style is.
I: So like you were talking about with the rhythm, that helps you get something into your head to compare with?
S1: Yeah. Then I start to read through maybe the first page, probably not up to tempo and I work on probably a page at a time or so.
I: Okay. So you listen to a recording and play a page at a time and then you're ready for the performance?

S1: [laughing] No. I usually decide where I want to try to do phrasing and then if there are hard intervals I work on those specifically and tuning issues and by that time I usually have a lesson and my teacher tells me what I need to do to improve.
I: And you use the teacher part to help guide you in the direction you need to go.

I: What sort of planning do you do before you begin your practice?
S1: Sometimes I write down what I plan to do.
I: Before?
S1: Yes. I used to do that a lot last year. Sometimes when I know I don't have much time but I'm not sure what I want to do, I just write it down afterwards so I can see what I did.
I: But nothing too elaborate?
S1: No. Last year when they said to do a practice journal I tried to write down details; sometimes it worked but I guess I haven't been doing that recently; maybe I should be.
I: But before the practice happens.
S1: Not all the times; sometimes.
I: Same for me.
S1: I think sometimes I would decide that I want to do this for half an hour or this for half and hour because then I could get through everything. If I had a lot of stuff to do I knew I couldn't just spend forever on one thing and get tired out. And then I would always end up going over on each thing usually so then I would have to move each time block and it would end up being really big. I usually want to get it all done.

I: Do you ever practice away from your instrument?
S1: Occasionally I try to sing the piece but yeah that's not playing the instrument.
I: Anything else? So when I say away from your instrument I mean where you're not producing sound. You're approximating the performance.
S1: Sometimes I play the piece in my head, but I don't know if that's really practicing.
I: Does it help you?
S1: Yeah I guess it helps me think of the whole piece in general because sometimes when I'm playing the piece I think I'm thinking of each phrase individually instead of like the whole thing.
I: And when you do that is it like in the practice room?
S1: No, just randomly wherever I am.
I: So like you're sitting in math class and you're playing Debussy?
S1: Yeah, but I don't usually get through the whole thing, it's just a part of it. And maybe it would be helpful if I did the whole thing.

I: You mentioned that you audiotape your practice; do you do it for later review or do you do it in the moment?
S1: I usually listen to it after. I haven't done that recently too much.
I: So sometimes more than others but you're not recording the practice and then listenting to that entire practice session later that day?
S1: No. It's usually like if I'm practicing and excerpt or a piece and I record me playing it a few times and then listen to it right then to see if I'm rushing or something like that.

I: What about videotaping; do you do that?
S1: No.

I: Do you use a metronome?
S1: Yes.
I: How and why?
S1: So I set the metronome, like if it's a hard passage, I set it to a slower tempo so I can learn it and increase it. Or if I'm having rhythm issues or also in band music where there's lots of syncopation then I use it to help with that.
I: How does it help?
S1: Well there's this one piece that's really jazzy and it's in cut time and almost everything is off the beat and I'm not used to rhythm that hard so I put it on a faster tempo so it would be in 4/4.
I: Instead of cut time?
S1: Yeah. That would help me to find out where the beat is and then I can find out which notes are on the beat and which are off.
I: So when you practice with a metronome what I think I'm hearing you say is you always do it under tempo. Is that true?
S1: Not all the time. I sometimes do it up to tempo but I don't think I ever go over tempo.
I: Ok.

I: Do you use a tuner?
S1: Yeah.
I: How and for what purpose?
S1: I often tune before I play.
I: So before you get ready to start practicing…
S1: After I warm up on some scale I tune my Bb and G or A and G to see if I need to adjust my clarinet because if I don't adjust it then the notes will be out of tune possibly. Then when I am going through a piece I might hold certain notes to see if they are out and tune and then I try to get them right on. Then I look away to see if I can get it on.
I: Then you look back?
S1: Yeah.
I: How else do you work on intonation?
S1: I started with the tuning CD recently so I…
I: What's the tuning CD?
S1: Well it has like 30 tracks and it has different pitches, like C and G really loud. Well it's not loud, you can turn it up loud but you try to blend with it and not have any beats. I'm getting better slowly but I still can't really tell when I'm off…
I: That was going to be my question; how do you know when you're right?
S1: I guess you can tell by hearing the beats but I can't hear the beats as well as when I'm playing with another person. I don't know if that's just me.
I: I don't know.
S1: Because I haven't talked to anyone else about their experiences with the tuning CD.
I: Have you considered using the tuner at the same time as the tuning CD?
S1: Yes I did that.
I: That helps me because I can play what I think sounds right and then check with the tuner to see what it is.
S1: Yeah.

I: You've talked a little bit about this but do you sing or speak during your practice session?

S1: I do sometimes.
I: Both or do you just talk to yourself?
S1: I try to sing the piece occasionally.
I: Like a performance?
S1: No like singing a little section if I don't understand the phrasing or if I want to decide how I want to phrase it.
I: So do you only sing for phrasing? Every time you've mentioned singing you've also mentioned phrasing.
S1: Yeah I guess because that's the whole thing I was focusing on this semester in lessons so that's probably why he asked me to sing.
I: So this semester your overall concept has been working phrasing?
S1: Not just phrasing, but musicality.
I: Ok, so you're using singing to help with that?
S1: Yeah.
I: That makes perfect sense. Do you think that it helps you?
S1: I think so.
I: How?
S1: Because then I don't have to think about the specific notes I'm trying to play on the instrument. I guess I don't have to think about the air as much, possibly so think I just think of how I want to phrase it before I play it on the instrument because then I can try in different ways.
I: Okay.

I: Do you have anything else you'd like to share about practicing or do you have any questions?
S1: I like to practice when I have good reeds, but when I don't have good reeds I don't like to practice. That's what I experienced today because my reeds are all bad.
I: How do you approach reeds so that you always have good ones?
S1: I don't always have good ones…
I: I know; you mentioned that. So is there anything that you could change so that you do have good ones?
S1: I bought a new reed case so I will have more storage room. I think the problem was that I would have a box and play it for a whole month and that's way too much.
I: And you're in band and orchestra so that's a lot of playing.
S1: And practicing and that's why then would get ruined in a short amount of time.
I: Yeah, they wore out. But maybe you've fixed it just by having more available.
S1: I've talked to other piece and I think so.
I: Or maybe rotating through faster.
S1: Yeah, so then I won't have only like 10 reeds to use; I can use 30 so eventually I won't have to buy as many reeds maybe? I mean I'll have to stock up on reeds and break them in now.
I: But each reed will last longer because it's not being played to death every time.
S1: Yeah. I think I might need to buy more reed boxes now. I only have one box that I'm breaking in now and I have bad reeds. Then I'll have the new reed case so yeah.
I: Well it sounds like you've got a plan.
S1: Hopefully it will work.
I: We're all done, Thank you!

STUDENT 2

Interviewer: What is your current age?
Student 2: 21

I: How long have you played the clarinet?
S2: Since I was in the fifth grade.

I: And what age is that in years?
S2: Gosh, I guess 11. So I've been playing clarinet for 10 years, that's crazy.
I: That's a long time.

I: How long have you taken private lessons?
S2: Define private lessons; I've been taking saxophone privately since the sixth grade.
I: When you began, did you start on clarinet or saxophone?
S2: I began on the clarinet, but I started taking saxophone lessons first because I was inadequate to play with my peers.
I: Got it.
S2: So I started taking privately on saxophone first semester in sixth grade and I started clarinet the summer before seventh grade and I haven't stopped taking lessons since.

I: How did you learn to practice?
S2: That's a good questions; I don't know.
I: Like, did your teacher ever model for you? I'm sure they modeled good playing, but did they ever say, "take this exercise and do it this many times?"
S2: Yes.
I: So you go specific instructions from the beginning on how you were supposed to practice?
S2: From the seventh grade to the tenth grade I received specific instructions but then the amount of instructions began to decrease.
I: Why?
S2: Because I was expected to know what to do.
I: So you had the same teacher?
S2: I switched teachers my freshman year of high school and my new teacher started to wean me off giving me specific instructions.

I: How do you typically spend your practice time?
S2: If I have an adequate amount of time I prefer to do the tuning CD first, after warming up on a little bit of scales so then I can play slightly more in tune and not flat. Then I like to take care of all my, you know, orchestral repertoire so whatever I'm playing ensemble wise, solo lit, orchestral excerpts done.

I: How do you detect problems in your playing; what makes you stop and fix something?
S2: When something doesn't sound quite right to me.
I: So, how do you know if it's supposed to sound right?
S2: I do a lot of recording study.
I: Like recordings of other people?
S2: Yeah

I: So you recall your memory of that recording and compare yourself to it
S2: Yes.
I: So when you detect a problem, then what do you do?
S2: I try to create a solution to try to create more of the recording in my head.
I: So you create a series of performance approximations to help you get closer to the performance that you are recalling?
S2: Yes.

I: Do you feel like you improve when you practice?
S2: Generally, yes.
I: What do you mean, 'generally'?
S2: Sometimes I feel when I study a piece for a long time, I get in a rut, but that's only if I'm working on a piece for a very long time; with short term pieces not so much.
I: When you do feel like you get in a rut, how do you manage that?
S2: Sometimes I take a break.
I: Like a break for a drink of water…
S2: No, like a break from the piece for a day or two and then come back to it later. And then I can usually find the answers that I could find before.

I: Do you incorporate scales, exercises, or etudes in your practice routine?
S2: When I need them, I do them.
I: How do you know when you need then?
S2: When something is broken.
I: What do you mean 'broken'?
S2: If I feel like I'm lacking in an area of fundamentals, such as scales…
I: So if you're having a lot of technical trouble, you'll do some scales.
S2: Yes. But that's during the school year. Over breaks its every single day scales arpeggios, all that stuff because I have the time to kill to do it but during the day-to-day hustle bustle I don't have time.
I: So when you have unlimited time, it's daily
S2: Yes, like 30 minutes to an hour.
I: But since you don't have time all the time then you only do it when you need it or when you're in trouble.
S2: Yes.

I: How do you approach learning new repertoire?
S2: I always start with a recording before I play it. I try to find what I like before I even start digging through my own practice generally so then I have a model. Since I'm not particularly rhythmic; my rhythmic accuracy isn't particularly high so having a model of something allows me to learn the piece by ear essentially, which speeds my learning process greatly.
I: So then you've found the recording, then what?
S2: Generally I try to attack the sections of the piece that I think will be most challenging for me.
I: You go straight to the trouble.
S2: Yes, because I think that the things that are difficult are the things that I'm going to need spend the most time working on to get it ready for performance.
I: So once you're in a difficult spot, then what do you do? Be more specific; like you just play it a lot of times and that's it?

S2: If it's technical, I go slow and increase the speed as much as my skill allows…
I: What it sounds like to me is that as you're practicing, you have a way that you like to feel when you play and that's relaxed, it sounds like.
S2: I want everything under my command.
I: So you start at a tempo where that's easy to do and then you gradually increase the difficulties and maintain the same feelings that you had when you began the piece, but it's just closer to the tempo that you'd like.
S2: Yes. Some of the other things I try to create exercises in other areas that are challenging that make it easier to play. Because I don't want it to be hard. That means I do a lot of no register key, no articulation; that kind of stuff.
I: I am catching your jive.

I: What sort of planning do you do before you begin your practice?
S2: When I'm walking up the stairs in the building I'll think of all the things I'd like to get done.
I: And the order that you'd like to do them?
S2: I usually assess the amount of time that I have and then I assess the things that need to be done based on the deadlines that I have.
I: All right.

I: Do you ever practice away from your instrument?
S2: Always!
I: How so?
S2: I do a lot of listening and I when I feel like being sidetracked from whatever is going on around me, I'll just check out and start mentally running through a piece.
I: And when you do that are you fingering through or just hearing it in your head?
S2: Yes, both.

I: Do you audiotape your practice for later review? If so, why?
S2: On occasion but not frequently. Generally I do that with a specific goal in mind, when I'm looking for something.
I: So in the moment you'll play a passage, record it, and then listen right back, but you're not recording and then listening while you eat dinner.
S2: That's right.

I: Do you videotape?
S2: Same thing

I: Do you use a metronome? How and for what purpose? I can't wait for this; I know you do.
S2: There have been points in my life where my metronome has run every single minute of my daily practice. So one summer my metronome ran four to six hours a day every single day.
I: I bet you went through a lot of batteries
S2: Actually I have a wall plug, so I just plugged it straight into the wall and it never left that wall.
I: Nice! So what did that do for you?
S2: I think the very first thing is that I don't have a very good sense of natural internal pulse and so something that was really important for me was to practice with a

metronome enough where I could trust myself to not need it anymore. So I use the metronome as a kind of crutch that I like to slowly take away.
I: And that worked for you?
S2: I would say that my rhythm has improved. Not necessarily as a result of that but as a result of me simply growing up and being able to confront my deficiencies on a mental level. I just don't let things get away from me. Because a big part of my tempo issue used to be that I would be playing and I would be like 'you know what, this is easy; watch me do it better' and I would just go faster. As I've kind of grown up, I've been able to get that under better control.
I: But the metronome didn't hurt.
S2: The metronome certainly doesn't hurt me.

I: Do you use a tuner?
S2: When I have a note that sounds out of place…
I: How do you know it sounds out of place?
S2: I generally trust my internal ear and then I also use it with the tuning CD so I'll use it to let me know whether or not I'm in tune with the tuning CD.
I: That's brilliant! I do the same thing.
S2: Because I especially do that when I'm trying to tune a third; that's when it's especially useful. When you're tuning the root or the fifth with the tuning CD you can tell pretty easily but as far as the thirds that's…
I: You have to know exactly how far you have to go…
S2: That's specifically what I'm using it on.
I: So you use it to check notes, you use it to check your ear.
S2: Yes.

I: Do you sing or speak during your practice sessions?
S2: Generally no. Well, it depends on the type of piece I'm working on. If it's atonal I can't really sing it very well…
I: But do you sing or speak rhythms or anything like that?
S2: No.
I: Let's say you're doing a Brahms symphony or something like that; do you sing that?
S2: Yes. I'll sing along to a recording
I: And do you finger at the same time as you're singing?
S2: It depends. I try to use the singing to transmit what I want and what sounds good to me.
I: Got it.
I: Do you have anything else you'd like to share about practicing or do you have any questions for me?
S2: I don't think there's anything I should share about my practicing; I think that pretty much sums it up.
I: All right, thank you very much.

STUDENT 3

Interviewer: What is your current age?
Student 3: I'm 23

I: How long have you played the clarinet?
S3: For 11 years…yeah.

I: So when did you start?
S3: When I was 12.
I: And that's 7th grade?
S3: 6th grade.
I: Is that when you band program started?
S3: Yes.
I: So you didn't start late or anything; you started with everyone else?
S3: Yes, I started as early as I could, in band.

I: How long have you taken private lessons?
S3: Since I was 14, so 9 years.
I: So you started in 8th grade?
S3: Yeah.
I: And who was your teacher?
S3: My band director, well the band director at the high school.
I: And that person played the clarinet?
S3: Yes.

I: How did you learn to how practice?
S3: Initially I guess…wow that is hard.
I: I mean do you recall your band director/clarinet saying, "This is how you should practice." or something like that?
S3: I remember he gave me a CD to tune and play along with it.
I: What kind of CD?
S3: It was this Gershwin book so it came with a book of like the head and a written out improvisation and I was just supposed to match it.
I: So that's it? You took lessons with him for 6 years and you would go to lessons and he would say very good, see you next week. But he didn't say you should do this or that more or less or something.
S3: I mean that's not all we did but I don't remember very much else [sic]. I stopped taking lessons with him when I was in 10th grade, but I guess initially I guess it was a CD and I remember he did give me scales. I'm not sure if he told me…
I: But it was nothing specific like, "You go home and you do this. This is how many times you do it per day and for this long."
S3: Right.

I: How do you spend your practice time now? Is there a way that you typically set it up?
S3: Well let's see. There are certain things that I do every week. Like for example I break in reeds every week. I devote an hour for that, so I guess there are some things that are structured.

I: Like what else?
S3: Also like playing scales, I try to do that for like 30-45 minutes every day, but I do it some every day.
I: Ok, what else?
S3: Long tones.
I: Long tones, scales and reed breaking in.
S3: And intonation and articulation.
I: So it sounds to me like the things that you do every week are fundamental things that are required no matter what you play. Like you have to have good reeds, you have to play your scales so your technique is clean, working on intonation and tone; those are the things you plan most? Is that true?
S3: Yeah, that is true.

I: So as you're practicing, you're going along, how do you detect a problem?
S3: How do I detect a problem?
I: Yeah, so I'll set up a scenario. Let's say you're playing a piece and you know you're going along and then something goes wrong; how do you know something went wrong?
S3: I guess it depends on what I'm working on? If I'm practicing being in rhythm, for example, I'll have a metronome and mostly by listening. I feel like there are lots of different answers to that.
I: Ok, I'll be more specific. Let's say scales. You're playing your scales. I assume that when you mess something up you do it again.
S3: Yes.
I: How do you know when you're supposed to do that? What pulls the trigger that says oops not good, I have to go back and do that again?
S3: I guess in scales, playing a wrong note or unevenly.
I: How do you know if a note is wrong?
S3: I listen to it.
I: So are you comparing with something that you hear in your head?
S3: Yeah.
I: Or the way it feels on the instrument or what?
S3: How I hear it in my head.
I: And how does that get there?
S3: [Laughing]
I: So say you're playing a piece; you have a concept of the piece. How do you get that?
S3: I guess from listening.
I: Listening to yourself play it?
S3: No, listening to recordings and other people play it. Because if I played it wrong then I wouldn't know what's wrong probably; I don't know.
I: I mean we all do this; we have a concept of a piece and that's what makes us unhappy or happy when we play it and that triggers us that something is bad enough to stop and work on. But there must be, you know, thousands of problems that are happening all the time that don't seem to bother us at all. Right, if we're going to be like a statistician about it. But what I'm interested in is what causes some things to matter enough that we work on them and other things don't matter at all. It varies from person to person; so that's what that question is trying to get at.
S3: [Laughter] I see. Well I think that it does vary from person to person and it depends what you're working on.

I: It does! What we value in general, and like you said, in each specific moment changes. So if I have my metronome going I'm probably not focusing on pitch.
S3: Yeah.
I: So yeah sure, of course it varies but it's just interesting where that error detection comes from. I think that really is a crucial part of how we get better.
S3: Yeah I think so.

I: So when you practice, do you feel like you improve?
S3: Yeah.
I: Why do you pause?
S3: [laughing] Because I've been frustrated with practice lately.
I: Oh! Tell me about that. I'm interested; it's perfect for this. This is your practice interview.
S3: Perfect. I just feel like; right now my biggest goal is to stop being tense when I play and I feel like sometimes when I focus on that I get more tense; I can feel my tension. And so I think that the key is to practice in more creative ways like in monkey position and in ways that makes me not think about what I'm doing. When I think about how tense I am, then I get tenser and it doesn't help anything. So I guess that's where I'm at right now; I'm kind of at the transition where I'm trying to figure out how not think about what I'm doing.
I: Uh huh. I think that's true. So the way you talk about it; here's what I hear. "My main goal is working on not being tense, which implies that you're doing something but muscles can't do that. Muscles can only tense and then they cannot tense (contract). But there's no relaxation. So if you pull up on one muscle, another muscle pulls to let that muscle go.
S3: That's true.
I: So things like monkey position, and things where you're just letting things be, that sounds like just the right place where you need to go.
S3: Yeah I think so too; I just need to more aware.
I: Yes.
S3: It's hard to translate that. I feel really relaxed and like I'm breathing well when I'm playing in monkey position or lying down or relaxed in the chair or something but it gets hard to translate that into playing in an orchestral situation.
I: Why do you need to relax in the first place?
S3: Because if I'm not relaxed then my breathing is shallow and I don't make good use of my air.
I: Maybe another approach would be to not breath shallowly. Instead of focusing on being relaxed, you could focus on breathing freely and deeply, which you have to be relaxed to do. So maybe just looking at it from another direction could help too. Maybe it doesn't have to be relaxed.
S3: Right. Yeah, that does make sense, but my professor and I were working on that first and we decided that it wasn't working so…
I: It's true; that can be a trap because it can just give you something else to worry about.
S3: [laughing] Yeah, I think that as well. I do think it's getting better
I: So let's leave that. In other ways, in general, do you feel like you improve when you practice and if so, why? Why do you feel that you get better?
S3: I do yeah, um. I guess because I'm working on things I think are worse so I work on those.

I: And how do you know you've gotten better? How do you judge? How do you say, "Now I know its better."? How do you judge that?
S3: In lots of ways. I'm more even or I don't play wrong notes. Again just aurally.
I: Is the only way you judge that from what you hear?
S3: In recordings or in live.
I: Or do you sometimes also judge from how you feel? Here's what I hear. You're talking a lot about working on how you feel; how you feel when you play and how that changes from where you're playing. Whether you're in the practice room in monkey position or in orchestra. But then you're judging your results from how it sounds, rather than how it feels. I don't know if that's the way it is, but that's what you said. Is that the way it is?
S3: [laughing] Well, it's a very subjective thing. I feel like it's hard to judge how I feel after I practice.
I: I don't mean how you feel after, but in the moment; how your body is acting.
S3: I guess that is part of it too.
I: So would it be a success if it sounded awful but using your body well?
S3: At the moment, yes.
I: I think so too. But you hesitated, but I feel like that's sometimes hard to accept. We are taught so much to only rely on the result and that's the only thing that matters.
S3: That's true.
I: It's true that we're taught that, but I'm not sure if it's true in real life.
S3: I see what you mean.
I: From an early age, I mean I don't think we're actively taught that. I don't think someone said to me, "All that matters is the product." But we do acquire that.
S3: I think that's because teachers focus on the product. They point out wrong notes…
I: Most teachers do, because it's easy. But it's maybe not always best.
S3: Hm…
I: I don't know.

I: Do you incorporate scales, exercises, or etudes in your practice routine?
S3: Yes.
I: How so?
S3: Well I usually. I've been working on my sight-reading lately as well and I think that is especially helpful because it makes me less critical of the product so I've been working on that as well as my breathing. So I have been working on etudes at the beginning of practice sessions. With scales I think that since they're common and I know them that they are helpful for helping me to relax and breath.
I: Ok, so you're using these things to help whatever concept you're working on.
S3: Yes.
I: I think that's great.

I: How do you approach learning new repertoire? Where do you begin?
S3: Well I begin by sight-reading it and then figuring out what tempo and style it's in.
I: How do you figure that out?
S3: By looking at the markings and listening to recordings.
I: So do you sight-read first and then listen to recordings or what do you do?
S3: I guess it depends.
I: On what?

S3: On if I can find a recording and how many markings there are and if there is a conductor or director or teacher telling me how it should be or if I'm working on it alone; things like that.
I: So you look for clues, other interpretations, what's in the piece, like what's written, to guide your style and that's where you start. So you have an idea of how it's supposed to be, then what?
S3: And then I find the hard parts technically and work on those.
I: How do you work on them?
S3: Well it depends [laughs].
I: So let's say you've got one passage that's a real barnburner; it's just really hard technically. What do you do?
S3: Again it depends. If it were hard because there are lots of leaps, then I would practice those slowly and in Christmas tree.
I: Let's say there are not a lot of leaps; just scales so fast, like the wind.
S3: I usually practice them in chunks. So one of my favorite ways to practice is four sixteenth notes and add one each time
I: So it's [singing]
S3: Yeah. Sometimes if I need to, I slow it down. Sometimes I do it in different rhythms if it's just an evenness problem.
I: Okay. Interesting.

I: What sort of planning do you do before you begin your practice?
S3: Well like I said, I try to practice some things everyday like scale and long tones and stuff.
I: So those are the things that you know you're going to do. How do you fit in the rest? Do you plan it?
S3: I usually just try to prioritize what performance is coming up next and how difficult the repertoire that's after that is. So I guess I do plan it, but not very carefully.
I: That's pretty careful. You know you have a deadline and you plan to practice the harder piece more.
S3: Yeah.

I: Do you ever practice away from your instrument?
S3: Yes.
I: How?
S3: Well like memorization I definitely practice away from my instrument.
I: So how do you practice away?
S3: I try to envision myself playing it so fingering it and hearing it.
I: When you're doing that are you watching the performance or are you in your body doing the performance?
S3: I'm in my body doing that performance.
I: Is there piano when you're doing it or is it just you alone in a practice room?
S3: I guess I hear the orchestra part as well but I don't really imagine piano there.
I: Any other ways?
S3: Yeah, lots. Breathing, I've been practicing that away from the instrument and with relaxation I've been trying to do a little meditation and like some yoga and stuff.
I: Yeah we've talking about how you're practicing some body things away from the instrument and then finding ways to bridge that gap between laying down and sleeping and playing the instrument and bringing the good from each.

I: Do you audiotape your practice for later review?
S3: Uh huh.
I: Why?
S3: So that I can hear things that I might not hear when I'm playing.
I: And do you listen back in the moment or do you record large sections and then listen to it maybe the next day.
S3: I do some of each. If I'm working on a particular spot in the music then I sometimes do listen in the moment. Same thing with exercise like long tones or scales, I do listen in the moment. But if I record a piece with my accompanist or something…
I: You'll listen to it the next day and listen for impressions.
S3: Yeah.

I: What about videotaping?
S3: I don't do that as much but I do it sometimes.
I: Me either. I don't have a video camera.
S3: Me either.
I: It's a pain. I mean I could do it on my computer but I feel like I can tell a lot from the audio.

I: Do you use a metronome?
S3: Yeah.
I: How?
S3: Sometimes when, well when I'm working on evenness or finger exercises I think it's helpful.
I: How does it help you?
S3: It lets me know if I'm even or not or if I stay in tempo.
I: So you use it as a benchmark of steadiness.
S3: Right.
I: And that lets you not have to do the comparison with what you're hearing in your head.
S3:
I: Is it because you don't trust what you're hearing in your head, that you need the metronome?
S3: Yes [laughing].
I: I don't know, maybe.
S3: I think so. Because if I'm playing it the way I hear it in my head and it's not with the metronome then that means it's not right; it's not in tempo.
I: So I guess by having the metronome going you're not just training your fingers, you also training what you hear and your concept of it as well.
S3: Yeah, I guess so.
I: Any other ways you use it? So you're uneven or you're working on fingers the metronome comes out
S3: If I'm working on hard rhythms and I need to keep track of where the beat is.
I: Sure. It's good for that
S3: Yeah that's pretty much it.
I: So let's say you've got a hard passage; how do you use the metronome in that case? Like if you're working on evenness, what do you actually do with the metronome?

S3: Sometimes I turn it on slower. If I'm working on evenness I definitely turn it on more clicks per beat.
I: So the harder the music, the more feedback you want from the metronome?
S3: Right…no. I wouldn't say that. The more I'm focusing on evenness the more feedback I want.
I: Ok. How do you dovetail into no metronome? So you're working on evenness, so you want a lot of clicks. But we don't really perform with metronome; how do you make that stick when you don't have the metronome?
S3: I guess first I turn it on fewer beats so maybe first to the beat, then like once every two beats…
I: So gradually less and less until you get to none.

I: Do you use a tuner?
S3: Yes.
I: How and for what purpose?
S3: The first way I use the tuner is for putting it on a tone and then playing a scale against that tone and I use the tuning CD.
I: How does that help you?
S3: It helps me to listen to if I'm in tune or not.
I: What are you listening for?
S3: I'm listening for overtones and if it sounds in tune.
I: How do you know if it sounds in tune?
S3: Well some intervals are easier than others. If you have an octave or perfect fifth and there are beats in it, then it's not in tune.
I: Okay, so you listen to beats. So let's say you have something harder, like a major third. How do you know when that's in tune?
S3: In that case I listen to overtones.
I: Do you ever use the tuner and the tuning CD at the same time?
S3: No. Well I guess that would be helpful.
I: Sometimes I do that. So I have the CD going and I play into the tuner to see if what I thought was right actually was.
S3: Well the problem with that is on more difficult intervals you can't tune it to the tuner, right?
I: Oh no, you can.
S3: No, because if it's a major third then…
I: No you can.
S3: But it has to be flat
I: But it has to be a certain amount flat, which you can know that and see where it is. But no you can't put each not 'in tune' on the tuner and then have it sound right.
S3: I guess that's true. I see what you're saying.
I: But if I know I want my perfect fifth to be two cents sharp you can have a tuner where you can see that.
S3: That's true.
I: Or even if it's not that specific, just a little sharp or quite a bit flat you can look at that and see or…
S3: That's a good point. What was the 'or' you were going to say?
I: Or you can tell the difference between what you think sounds good and what is actually correct mathematically and then make decisions. I'm not saying it has to be that

way every time, we aren't tuning a piano, but what I think what we have that is so much better than a piano is flexibility.
S3: Yeah, it's true.
I: But I sometimes use what I hear and what I see on the tuner to help me come closer to what I actually want.

I: Do you sing or speak during your practice sessions?
S3: Yes.
I: How? In what way? Why? How does it help you? So let's first talk about speaking.
S3: I think I use speaking most in regard to rhythm. So if I'm having a difficult time with a hard rhythm then I speak it.
I: Just [singing] like that or counting aloud?
S3: Well I think it's important to feel one in your body. I prefer to feel the beat in my body and tap my foot or clap my hands while I speak the rhythm. I think that's most helpful for me. As for as singing goes, if I'm working on musicality I'll sing or if I'm working on…I guess that's most often for musicality.
I: Like phrasing or something like that. So what's your process? You'll sing it first and then try to match that on your instrument?
S3: Yes.
I: Do you think that it helps you?
S3: I do, yeah.
I: In what way?
S3: I think it helps me to see where naturally the emphasis falls and how sometimes how loud or soft something should be.
I: And how do you know that your singing is what you want? Is it just like the constitution and "It came from my mouth and therefore it is true." What makes you think that your singing is what you have to model?
S3: Well I think that singing helps me because it is more natural than playing.
I: Oh! So you're saying really that the singing helps highlight the technical capabilities of the instrument. Maybe I'm not saying that right but when you sing you know that you're taking away things that make it 'clarinety'.
S3: Yeah.
I: So rather than using singing as the absolute model of perfection, you're using that to help highlight an idiosyncrasy of the instrument that you didn't realize was there.
S3: Yeah, yeah. I think so.
I: Ok.
S3: I don't take it as a model of what has to be. In fact I often change it after I sing it.
I: Why do you change it?
S3: Because sometimes I just think it's better a different way. Like for example in the Mozart [concerto] there's that whole note in the theme; I thought it should be a crescendo when I first played it, during high school, but I think that it didn't make any sense with the orchestra part. I sang it how I thought it should be, but when I listened to it with the orchestra part…
I: You changed it.
S3: Yes.
I: So you're just exploring different ways and you're choosing as you go?
S3: Right.
I: And that happens over the course of days, weeks, months, years? What?
S3: All [laughs].

I: But, within a practice session too?
S3: Yeah.
I: So the whole gamut. You'll maybe sing something one way and then the next time you'll sing it a different way and then you'll make a choice on how to play it between these two and then you'll maybe change the next week, next year…who knows. Je ne sais quoi.
S3: But it's not quite as fluid as it sounds because if there's a performance that week, I'm probably not going to change it.
I: Probably not.
S3: Also if it's a piece I'm very familiar with, then it won't throw me off to change something.
I: Okay.

I: Do you have anything else you'd like to share about practicing or any questions or anything?
S3: I don't think so.
I: Okay, thank you very much.
S3: You're welcome.