THE EFFECTS OF LEARNING PRACTICES ON MOTIVATION AND ENGAGEMENT AMONG HIGH SCHOOL INSTRUMENTALISTS

by

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TABLE OF CONTENTS

LIST OF TABLES ........................................................................................................ 5
LIST OF FIGURES ........................................................................................................ 6
ABSTRACT ..................................................................................................................... 7

CHAPTER ONE: INTRODUCTION .............................................................................. 9

A Framework for Motivation: Self-Determination Theory ................................. 10
Music Teaching Practices and Student Music Engagement .............................. 11
Statement of the Problem ....................................................................................... 13
Purpose of the Study ............................................................................................... 13
Research Questions ............................................................................................... 14
Delimitations .......................................................................................................... 15
Definitions of Terms .............................................................................................. 16

CHAPTER TWO: REVIEW OF LITERATURE ............................................................ 18

Self-Determination Theory .................................................................................... 18
Understanding Student Motivation in Context: How Music Practices
Influence Motivation ............................................................................................... 23
An Argument for the Integration of Teacher-Centered and Informal
Learning Practices .................................................................................................. 32
Applying Self-Determination Theory to Music Learning Practices ............... 36
Summary .................................................................................................................. 37

CHAPTER THREE: METHODOLOGY ..................................................................... 39

Purpose of the Study ............................................................................................... 39
Research Questions ............................................................................................... 39
Participants ............................................................................................................. 40
Measures ............................................................................................................... 42
Procedure .............................................................................................................. 48
Analysis ................................................................................................................. 50

CHAPTER FOUR: RESULTS ............................................................................... 52

Descriptive Statistics ............................................................................................. 52
Preliminary Analyses .............................................................................................. 53
Analysis and Results of Research Questions ..................................................... 55
Summary ................................................................................................................. 68
CHAPTER FIVE: DISCUSSION ................................................................. 71

Discussion of Research Question 3 .............................................. 71
Discussion of Research Question 5 .............................................. 73
Discussion of Research Question 6 .............................................. 78
Discussion of Research Question 7 .............................................. 80
Limitations of the Current Study ............................................... 82
Conclusions and Future Directions .......................................... 85

APPENDICES .................................................................................. 89

A: Music Self-Determination Scale ............................................. 89
B: Permission to use MSDS and WPS from Original Author ........ 90
C: Student Survey ........................................................................ 92
D: Willingness to Play Scale ......................................................... 93
E: Letter of Introduction .............................................................. 94
F: Script for Survey Administration ........................................... 96
G: Guardian Informed Consent Document ................................. 97
H: Informed Assent Document .................................................. 99

REFERENCES ................................................................................. 100
LIST OF TABLES

Table 3.1  MSDS items from the intrinsic regulation subscale .................. 44
Table 3.2  MSDS items from the integrated regulation subscale ................. 44
Table 3.3  MSDS items from the introjected regulation subscale ............... 45
Table 3.4  MSDS items from the extrinsic regulation subscale ............... 45
Table 4.1  Descriptive statistics ....................................................... 52
Table 4.2  Correlations between learning style groups, self-determination scales, musical engagement variables, and participant demographics ................................................................. 54
Table 4.3  Power analysis results for t-tests comparing ILP and TCLP groups on self-determination scales ................................................................. 56
Table 4.4  Power analysis results for multivariate regressions predicting student reported desire to engage in music-making activities outside the school setting ................................................................. 59
Table 4.5  Multivariate regression results predicting student-reported desire to engage in music-making activities outside a school setting from group status and self-determination variables ...................... 60
Table 4.6  Power analysis results for multivariate regressions predicting student-reported actual engagement in music-making activities outside the school setting ................................................................. 64
Table 4.7  Multivariate regression results predicting student-reported actual engagement in music-making activities outside a school setting from group status and self-determination .............................. 65
Table 4.8  Power analysis results for multivariate regressions predicting student WPS scores .......................................................... 66
Table 4.9  Multivariate regression results predicting student WPS scores from group status and self-determination variables ...................... 67
# LIST OF FIGURES

| Figure 2.1 | The SDT continuum with types of motivation and associated regulatory styles ........................................ 21 |
| Figure 4.1 | Plot illustrating the interaction of group status and intrinsic regulation on student-reported desire to engage in music making activities outside a school setting ................................ 61 |
| Figure 4.2 | Plot illustrating the interaction of group status and integrated regulation on student-reported desire to engage in music making activities outside a school setting ................................ 63 |
| Figure 4.3 | Plot illustrating the interaction of group status and integrated regulation on student WPS scores ................................. 68 |
The Effects of Learning Practices on Motivation and Engagement Among High School Instrumentalists

Abstract

by

DAVID C. SCALISE

The purpose of this study was to compare student motivation and student engagement in music making across two groups of high school students. The first group of students \( (n = 27) \) was enrolled exclusively in a curricular band ensemble that primarily uses traditional, teacher-centered learning practices (TCLP). The second group \( (n = 16) \) was from the same school and enrolled in an extra-curricular orchestral ensemble that incorporates informal learning practices (ILP; Green, 2006) into the experience. Student surveys, the Music Self-Determination Scale (MacIntyre & Potter, 2014), and the Willingness to Play Scale (MacIntyre & Potter, 2014) were used to capture student motivation and musical engagement. T-tests were used to determine whether statistically significant and meaningful differences existed between groups; multivariate regressions were used to predict student engagement in music making activities based on the interaction between learning practice (TCLP vs. ILP) and motivation type (intrinsic, integrated, introjected, and extrinsic regulation).
Results suggested several benefits to student participation in groups that emphasize informal learning, including a statistically significant increase in student-reported desire to engage in music making outside the classroom for students enrolled in the ILP group relative to students enrolled in the TCLP group. In addition, participation in the ILP group (as opposed to the TCLP group) was particularly beneficial in fostering a desire to engage in music making activities for students who reported low levels of intrinsic or integrated regulation; these findings were also significant, yielding p-values of less than 0.05. Finally, participation in the ILP group was found to significantly increase student willingness to perform musically, so long as the student reported high levels of integrated motivation. However, students who participated in the ILP group and reported low levels of integrated motivation were significantly less willing to perform musically, compared to both high-integrated motivation students enrolled in the ILP group and low-integrated motivation students enrolled in the TCLP group. I hope that the current study fosters future research on the role of music teaching style and student motivation across various behavioral, cognitive, and emotional outcomes relevant to the field of music education.
Chapter 1

Introduction

In the field of music education, teachers have the opportunity to engage both their students and the surrounding community through music. Individuals develop and become a part of a broader group through music rehearsal and performance, and also have the opportunity to gain a deeper understanding, through listening, of what their musical community represents. Within this framework, the work of music educators involves balancing the individual and diverse needs of students with the needs of the ensemble community that the educator is creating through rehearsal and performance.

It is important that music educators maintain a primary focus on the learning environment in which they make music with their students. The current context of music education in secondary schools is one of diminishing public resources, in which music education is typically only seen as a student elective experience (Kratus, 2007). In this secondary education culture, it becomes necessary for teachers to understand the learning experience so as to effectively engage students in the process of growing in their musical abilities. This is a daunting task, as each student walks into the classroom with a unique personal context that shapes his or her music making experience. Indeed, as Reimer explained, “whatever the music or its purpose or setting, all individuals are likely to experience it emotionally in ways particular to them” (2002, p.74). As such, it is imperative to show students how their school music experiences are relevant and how those experiences can be applied to a personal context; that is, to their everyday lives both inside and outside of the classroom.
In this framework, a clear goal in music education is to engage students within their personal context in such a way that they walk out of the classroom wanting to come back. In other words, music educators need to find ways to maximally motivate students toward musical learning. Motivation is a multidimensional construct, impacted both by an individual’s behaviors and psychosocial needs, as well as their environment (Ryan & Deci, 2000). A multi-faceted approach to motivation seems fitting when attempting to understand motivation in the context of student engagement, as students are influenced by both personal and environmental factors.

**A Framework for Motivation: Self-Determination Theory**

Prominent psychological researchers Ryan and Deci (2000) presented Self-Determination Theory (SDT) as a framework for conceptualizing motivation among people in a variety of social contexts. SDT places motivation on a continuum, with one end denoting motivation based on reasons completely external to the self (extrinsic motivation), and the other end representative of motivation based on purely self-endorsed factors (intrinsic motivation). This continuum also depicts how different types of motivation interact with an individual’s ability to regulate their behavior, mapping onto the various motivation types the extent to which behavioral regulation is other-directed and externally controlled (extrinsic) versus internally driven (intrinsic).

SDT also provides a framework for how individuals find the motivation to carry out tasks that are not supported by purely self-endorsed factors. This framework identifies four key concepts along a continuum that outlines the extent to which motivation and regulation of behavior are self-directed (see Figure 2.1 in Chapter 2 for a visual representation of this continuum). On one end of the continuum is *external*
regulation, the least self-directed of the four concepts, in which a person’s behavior is solely a function of external contingencies. The second category, introjected regulation, results when the regulation of behavior occurs in order to avoid guilt, gain approval, or enhance pride. Moving further along the continuum, identified regulation arises from personal values and gaining a sense of meaning from engaging in the activity. Finally, intrinsic regulation results from an inherent interest and sense of enjoyment from the activity itself. These four categories provide a more comprehensive and complex framework with which to investigate the role of student motivation in music education.

Music education researchers suggest that intrinsic motivation has been associated with a variety of positive outcomes, such as: increased student-report of desire to learn and self-competence (MacIntyre & Potter, 2014), increased student effort in performance and practice (Comeau, Huta, & Liu, 2014; Schatt, 2013; Schmidt, 2005), increased creativity and musical technicality during student performance (Eisenberg & Thompson, 2003), and stronger positive student opinion of life-long music making (Legutki, 2010). Music education researchers also have shown that high levels of student-reported extrinsic motivation do not negatively impact student achievement or student engagement in music making, as long as students also report high levels of intrinsic motivation (Comeau et al., 2014; Renwick & McPherson, 2009). This research base has established a strong connection between intrinsic motivation and positive outcomes in music education; however, these studies have not shed light on how music educators can cultivate intrinsic motivation toward music making in their students.

Music Teaching Practices and Student Music Engagement
Compared to the extensive body of research on the role of student motivation in music education, considerably less research has been published on the influence of music learning context and music teaching practices on student motivation. Current music instruction is largely based on traditional teacher-centered music practices, in which the focal point of all musical activity is the instruction of the teacher, who is seen as a “master musician” (Green, 2002). There are many benefits to teacher-centered learning practices in music education, such as providing music students with essential descriptive and analytical tools (Fraser, 2013), and instilling in music students a strong knowledge of and commitment to music literacy skills, traditional aural skills, and harmonic theory (Hannan, 2006). Conversely, other researchers have suggested that teacher-centered music learning practices may not be maximally motivating to students (Green, 2002; Small, 1998), as these practices are not commensurate with practices used to engage in musical expression outside the classroom (Campbell, 1995; Jaffurs, 2004).

Music education researchers and practitioners have recently begun to discuss the potential benefits of integrating student-centered practices into the music classroom (Brown, 2008). Taking a student centered-approach is posited to foster increased engagement, interest, and independent musical development (Chen-Hafteck, 2007; Gluschankof & Kenney, 2011; Niland, 2009), as well as increased student motivation (Scott, 2011). Only one study to date has directly compared the effects of student-centered learning practices versus teacher-centered learning practices on student motivation (Tseng & Chen, 2010). This study indicated that student-led learners reported significantly less extrinsic motivation than instructor-led learners. The paucity of studies directly comparing teacher-centered and student-centered learning practices suggests that
this finding is exploratory in nature, and that more studies are needed in order to understand the relationship between specific learning practices and student motivation.

One specific type of student-centered practice in music education is referred to as informal learning practices (Green, 2002). This term encapsulates practices traditionally used outside the classroom, in which participants learn through an integration of listening, performing, composing, and improvising; no “master musician” assumes a lead role (Green, 2002). Music education researchers have recently begun to advocate for finding effective ways to integrate informal learning practices into the classroom, as it is thought that informal learning practices increase intrinsic motivation in students and promote life-long musical expression (Gamble, 1984; Green, 2002).

**Statement of the Problem**

Multiple authors have posited the potential connection between the use of informal learning practices and increases in student motivation (Feichas, 2010; Green, 2006; Jaffurs, 2004), but very few empirical studies exist on how specific learning practices influence student motivation. Examining a potential relationship between specific music learning practices and increased student motivation to engage in music making could provide further understanding of how best to integrate teacher-centered and informal learning practices in school music settings, in order to encourage life-long music making.

**Purpose of the Study**

I sought to provide preliminary evidence for a relationship between specific learning practices and student motivation to engage in music making. In addition, I explored how these two constructs impacted actual student engagement in music making.
activities. Thus, the purpose of this study was to compare student motivation and student engagement in music making across two groups of high school students: (a) students who were enrolled exclusively in a curricular band ensemble that primarily uses traditional, teacher-centered learning practices, and (b) students within the same institution who were enrolled in an extra-curricular orchestral ensemble that strongly incorporates informal learning practices into the ensemble experience. Responses from student surveys, the Music Self-Determination Scale (MacIntyre & Potter, 2014), and the Willingness to Play Scale (MacIntyre & Potter, 2014) were used to capture student motivation and student musical engagement.

**Research Questions**

The following research questions were investigated:

1. Relative to those students receiving teacher-centered learning practices (TCLP), do students exposed to informal learning practices (ILP) report significantly different levels of intrinsic motivation, identified regulation, introjected regulation, and/or extrinsic regulation, as measured by the Music Self-Determination Scale (MSDS; MacIntyre & Potter, 2014)?

2. Does the percentage of students who report music making activities outside the classroom differ between groups (students exposed to TCLP vs. students exposed to ILP)?

3. Does the percentage of students who report a desire to be involved in music making activities outside the classroom differ between groups (TCLP vs. ILP)?
4. Do students exposed to TCLP have different scores, on average, on the Willingness to Play Scale (WPS; MacIntyre & Potter, 2014) relative to students receiving ILP?

5. Across groups, is there a unique combination of music instruction practice (teacher-centered learning practices versus informal learning practices) and student motivation type (intrinsic, identified, introjected, or extrinsic motivation) that is more strongly related to student-reported desire to engage in music making outside of a school setting?

6. Across groups, is there a unique combination of music instruction practice and student motivation type that is more strongly related to student-reported engagement in music making activities outside of a school setting?

7. Across groups, is there a unique combination of music instruction practice and student motivation type that is more strongly related to student-reported willingness to play music in front of others, as measured by the WPS (MacIntyre & Potter, 2014)?

**Delimitations**

This study provided a glimpse into the relationship between learning practices, student motivation, and student music engagement. I evaluated the impact of informal learning practices, relative to teacher-centered learning practices, on student motivation, as well as student engagement in music outside of a school setting. I did not evaluate how these constructs influence student knowledge or student musical expertise, though a project of that nature would be a natural extension to the current study. Finally, I evaluated learning practices, motivation, and music engagement exclusively within
instrumental ensembles, and as such, generalizing findings from this study to other school settings (e.g. choral, secondary general) is not appropriate.

**Definitions of Terms**

**Self-Determination Theory (SDT; Ryan & Deci, 2000).** SDT views motivation as a multidimensional construct influenced by both intrapersonal and environmental factors. SDT asserts that an individual’s social environment can enhance or undermine motivation, dependent on the extent to which the social environment supports three psychological needs of the individual: competence, autonomy, and relatedness. Each of the types of motivation, and the nature of behavioral regulation associated with each type, is described further in the “A Framework for Motivation: Self-Determination Theory” section above, as well as in Chapter 2.

**Traditional Teacher-Centered Learning Practices (Green, 2002).** In a traditional teacher-centered classroom, an ensemble director selects the music, and students read music notation to learn the material. Learning takes place in groups created by the ensemble director or institution and involves adherence to standard curriculum and/or pedagogical methods. The primary focus of the learning process is to prepare a piece for performance using the director’s interpretation of the piece.

**Student-Centered Instruction (Brown, 2008).** An alternative to traditional instruction practices, student-centered instruction is defined as a form of active learning where the teacher shares control of the classroom with the students. In this approach, students generally learn in an experiential and independent manner and are dynamically included in classroom decision making-processes. Planning, teaching, and assessment in
a student-centered classroom revolve more directly around the needs and abilities of the individual students.

**Informal Learning Practices (Green, 2006).** Informal learning practices are a specific type of student-centered learning practices within the field of music education. Informal learners distinguish themselves from their traditional counterparts in five main characteristics, by (a) choosing their own music; (b) copying recordings by ear; (c) learning in self-made groups; (d) assimilating skills and knowledge in personal, often haphazard ways without regard for standard curriculum or pedagogical methods; and (e) integrating listening, performing, improvising and composing, with an emphasis on creativity.
Chapter 2

Review of Literature

One of the goals of music education is to increase student motivation and engagement (Legutki, 2010). While this may seem like a simple goal, motivation is not a simple concept – rather, it is a multifaceted construct that involves (a) aspects of a person’s behaviors and psychological needs, as well as (b) how a person’s psychological needs are supported or inhibited by their environment. Ryan and Deci’s (2000) Self-Determination Theory provides a model for conceptualizing motivation that outlines how a person’s motivation is impacted by the interactions between his or her own behavior, psychological needs, and his or her environment. This model is especially helpful when attempting to understand student motivation, as student learning is impacted by both environmental (external) and personal (internal) factors. In this review of literature, I will begin with a review of Self-Determination Theory and how this theoretical framework has been applied to better understand the link between student motivation and student musical engagement, self-concept, and achievement. I will then review the literature related to how music instructional practice may impact student motivation and student engagement in turn.

Self-Determination Theory

Self-Determination Theory (SDT) views motivation as a multidimensional construct that can be influenced by a variety of both intrapersonal and environmental factors (Ryan & Deci, 2000). At its most basic level, SDT places motivation on a continuum, with one end representing motivation based on purely self-endorsed factors (intrinsic motivation) and the other end representing motivation based on reasons...
completely external to the self (extrinsic motivation). Early research in adult samples comparing intrinsically motivated versus extrinsically motivated individuals suggested that those who report high levels of intrinsic motivation have more personal interest and excitement in their subject, which is generally related to enhanced performance, persistence, creativity (Deci & Ryan, 1991; Sheldon, Ryan, Rawsthorne, & Ilardi, 1997), self-esteem (Deci & Ryan, 1995), and general well-being (Ryan, Deci, & Grolnick, 1995). These findings were present even when both groups reported the same level of perceived competence in the activity.

Given the growing research base asserting the effectiveness of intrinsic motivation to increase a variety of positive psychosocial-factors, Deci and Ryan (1991) became interested in better understanding the specific mechanisms that elicit and sustain intrinsic motivation. Deci and Ryan used Cognitive Evaluation Theory (CET; 1995), a sub-theory within SDT, to further conceptualize these mechanisms. The CET framework suggests that an individual’s social environment can enhance or undermine motivation, dependent on whether the social environment supports three innate psychological needs: the need for competence, autonomy, and relatedness. Feelings of incompetency, felt through such avenues as non-optimal challenges and demeaning evaluations, can diminish intrinsic motivation. Intrinsic motivation can be further undermined if people experience their behavior as driven by forces that are not self-determined (i.e., not autonomous). Finally, if a person performs an activity in an environment where others are not supportive or responsive to that person’s efforts (e.g., an environment that does not promote feelings of relatedness), intrinsic motivation may also diminish.
Intrinsic motivation is an important type of motivation, but the majority of activities that people engage in are not solely supported by intrinsically motivating forces. Indeed, once an individual leaves early childhood, the individual’s intrinsic motivation is progressively inhibited by social pressures to take on more responsibility and engage in activities that are not inherently interesting or enjoyable, such as paying taxes, going to the doctor, or buying groceries. SDT attempts to provide a framework for understanding how people find the motivation to carry out tasks that are non-intrinsically motivating, and how these types of motivation affect ongoing engagement with an activity, performance quality in the activity, and overall well being. In other words, SDT focuses on how different types of motivation interact with an individual’s ability to regulate their behavior, and the extent to which this regulation is internally driven (intrinsically motivated) versus other-directed and externally controlled (extrinsic motivation).

To further differentiate intrinsic from extrinsic motives, Deci and Ryan (2000) identified four key concepts along a continuum outlining the extent to which motivation and regulation of behavior are self-directed (see Figure 2.1). The least self-directed of the four concepts is identified as external regulation, in which an individual’s behavior is solely a function of external contingencies (rewards and punishments). For example, a person might be acting based on external regulation if they are only participating in a music ensemble because they get to miss days of school for performances (reward). The second category along the continuum, introjected regulation, results when the regulation of an action has been partially internalized. Behaviors are regulated in order to avoid guilt or anxiety, gain approval, or enhance pride. In a music setting, this may be when students practice their music so that they are not embarrassed performing in front of their
classmates. The third category, identified regulation, is more autonomous in nature. This motivation arises from personal values and gaining a sense of meaning or sense of self from engaging in the activity (e.g., “It is important for me to learn this part, because I am the bass player in this ensemble and I have a specific role to play as the bassist”). The most self-directed regulation is intrinsic regulation, which results from an inherent interest and sense of enjoyment from the activity itself, such as playing in an ensemble simply for the pleasure it provides.

Figure 2.1

*The SDT continuum with types of motivation and associated regulatory styles*

Recently, researchers have begun to focus on the ways in which SDT and intrinsic motivation impact music engagement, musical self-perception, and music ability. Specifically, MacIntyre and Potter (2014) found in a sample of nearly 600 adult
musicians who either played the piano or the guitar that intrinsic motivation is positively correlated with desire to learn, perception of competence, and effort invested. Similarly, in a sample of 16 adult musicians specializing in improvisation, the musician’s level of intrinsic motivation to engage in improvising was positively correlated with the perceived creativity, complexity, and technical goodness of the musicians’ improvisations as rated by a panel of expert musicians (Eisenberg & Thompson, 2003).

Music education researchers have also begun to explore how SDT might provide a framework for understanding the links between motivation and student musical engagement, self-concept, and achievement. For example, in a sample of 300 seventh through twelfth grade students enrolled in band programs, higher student report of intrinsic motivation was significantly and positively correlated with teachers’ ratings of student performance and effort, as well as students’ self-reported practice time (Schmidt, 2005). Similarly, in a sample of high school students enrolled in band programs, students reporting higher levels of intrinsic motivation were more likely to report plans for future engagement in music activities (Legutki, 2010). Finally, in a sample of 796 middle school students, results showed that students reported more intrinsic than extrinsic motivation to engage in practicing their instrument (Schatt, 2013). Additionally, within this sample, intrinsic regulation and introjected regulation were most strongly and positively correlated with student-reported amount of time spent practicing. Across studies, it appears that intrinsic motivation is associated with a number of positive outcomes in music education, both in regard to student practicing and performance behaviors, as well as student attitudes toward life-long music making activities.
Past psychological researchers have indicated that providing extrinsic rewards, and thereby fostering an environment that promotes extrinsic regulation, can undermine the development of intrinsic motivation (Ryan et al., 1995). However, in the field of music education, it appears that extrinsic and intrinsic motives can co-exist without an impact on performance. For example, in a study of 677 youth aged 8-19 years, results showed students with high levels of internal motives achieved significantly higher performance results on an Australian Music Board Examination than students with very low internal motivation (Renwick & McPherson, 2009). Of note, the group that had high levels of internal motives only did not differ in their performance from the group that had high levels of both internal and external motives. Similarly, a study comparing Chinese and American children between the ages of 6 and 17 who were learning to play the piano indicated that, in comparison to American students, Chinese students reported significantly higher levels of intrinsic regulation, identified regulation, and external regulation, suggesting that high levels of intrinsic and extrinsic motivation can coexist (Comeau et al., 2014). Chinese students also reported practicing twice as much as American students. Across both studies, it appears that the presence of extrinsic motivation did not negatively impact achievement or engagement, so long as high levels of intrinsic motivation were present.

**Understanding Student Motivation in Context: How Music Practices Influence Motivation**

While researchers have established that intrinsic motivation leads to better outcomes, there has been less research on how to motivate students. In other words, what teaching practices lead to increased intrinsic motivation to engage in music? In this
section, I will review existing literature on how specific music instructional practice (e.g., teacher-centered learning practices, student-centered instruction, and informal learning practices) may impact student motivation and student engagement in music making activities. I will also explore current dilemmas facing teacher-centered learning practices and student-centered instruction in music education settings.

**Traditional teacher-centered learning practices.** In order to explore how music educators might optimally adjust their teaching practices to meet the needs of today’s students and increase student engagement, it is important to first understand the current predominantly practiced teaching methodology. Traditional music learning practices used in North American schools have evolved from European models (Campbell, 1991) and are known to include one or more of the following elements (Green, 2002). First, there is a clear focus on instrumental and/or vocal instruction, which occurs either within or alongside educational institutions. Instruction is typically focused around the use of written curricula, syllabi, or explicit teaching traditions. Further, instruction usually emphasizes learning through musical notation and draws upon a large body of literature including texts on music, method books, and teaching materials. Student performance is assessed through the use of systematic mechanisms such as graded exams or national school exams. Instruction is guided by a professional teacher who directs students in how to interpret and perform the music and allows for little opportunity for students to relate their own musical understanding or experience (Regelski & Gates, 2009; Reimer, 2000).

Current teacher preparation curricula reflect the dominance of traditional music practices in school settings. For example, in a survey of 10 American university instrumental teacher preparatory curriculums, Jones (2008) concluded that these curricula
seemed to be preparing teachers to maintain the traditional ensembles of concert bands and orchestras in their future roles as music educators. Many music educators and music researchers support the continued emphasis on maintaining traditional ensembles, as traditional teacher-centered learning practices often lead to student accumulation of valuable analytical and descriptive tools (Fraser, 2013). For example, a survey of 43 college students enrolled in a contemporary music degree program revealed a strong focus on and commitment to music literacy skills, traditional aural skills, and harmonic theory as part of their instruction (Hannan, 2006).

**Current educational dilemmas in traditional music education settings.** While teacher-centered learning practices have served as the backbone of music education programs over many years, it is estimated that only 15% of students in high schools across the United States are participating in a traditional curricular music education program (Shuler, 2010). Students in Western cultures have many opportunities to engage in music as a part of their school day or in community groups, but as students grow older, they steadily drop out of music courses.

Some music scholars have speculated as to why traditional music practices are not effectively engaging more students. For example, Small (1998) asserted that traditional music education often does not fully promote the development of student musicality. He believed that many music educators take the following stance toward students who enroll in their programs: unless students like and are proficient in the type of music the educator believes to be “real” music (which may be classical music, marching band, show choir, etc., but rarely improvised or self-composed music), the student is not considered musical (Small, 1998). Finney and Philpott (2010) reported complementary findings to Small’s
assertions in their series of case studies of 20 recent music graduates enrolled in a 36-week university-school-based course of initial teacher education. Their qualitative work suggested that when teacher-centered learning practices are exclusively prioritized, a teacher’s “meta-pedagogy” is less fully developed. The authors defined “meta-pedagogy” as the teacher’s understanding of many different manners in which students learn (Finney & Philpott, 2010). Findings from these two research articles suggest that traditional music education environments present too narrow a scope of what music is and how music can be learned, and this narrow scope is not maximally engaging the broadest range of students.

In addition, many music scholars point out the discrepancy between traditional music learning practices and practices used to engage in musical expression outside of the classroom (Campbell, 1995; Green, 2002; Jaffurs, 2004). To explore this discrepancy, Green (2002) interviewed nine popular musicians between the ages of 15 and 50. She asked each musician detailed questions regarding the nature of their musical skills and knowledge, how they had acquired these skills, how they believed they had developed as musicians, what attitudes and values they attached to acquiring musicianship, and their experience in formal music education. Across the interviews, Green found that much of the music learning and music making came from the practice of imitating other musicians, studying recordings, and performing for others in less formal settings. While these practices are present in formal music education, they are often peripheral and used in adjunct, if at all, to traditional music practices.

Campbell (1995) also pointed out the discrepancy between traditional music learning practices and music making outside the classroom through her qualitative
naturalistic study of two self-formed high school rock bands in the Seattle area. Campbell conducted interviews with the band members and also observed rehearsals. Compared to traditional music ensembles, these bands were much less structured within their rehearsals, and there was almost no guidance from “outside” sources such as teachers or “master musicians.” Similar to findings from Green (2002), rehearsals often included copying of recorded performances, and all group members at one time acted as a model for the others. Notably, all interviewed band members, at the time of the study, had withdrawn from curricular music education.

Further, a qualitative naturalistic study of a high school rock band conducted by Jaffurs (2004) adds to the assertion that traditional music practices do not fully prepare students for the type of music making that occurs outside the classroom. Through qualitative interviews and observations of band rehearsals, Jaffurs suggested that there is often no true leader in these types of ensembles. Band members acted democratically during the majority of their rehearsals, from deciding where they rehearsed to the style of music they played to the instruments they wanted to use. Learning seemed to occur between peers through nonverbal and verbal communication about each other’s playing. This is in contrast to traditional practices, in which a “master musician” is almost always at the helm and makes the majority of music making decisions (Green, 2002), decreasing the capacity for relatedness and intrinsic motivation in turn.

In summary, traditional teacher-centered music learning practices provide music students with essential descriptive and analytical tools, and can instill in music students a strong knowledge base in music literacy skills, traditional aural skills, and harmonic theory. Still, there is a growing understanding that teacher-centered music learning
practices can be accompanied by a degree of technical refinement that is non-commensurate with learning that occurs outside the school setting (Jaffurs, 2004). Consequently, many researchers are beginning to advocate for the integration of student-centered approaches with teacher-centered learning practices in music education, as outlined below.

**Student-centered instruction.** Since the beginning of the 20th century, student-centered instruction has been discussed as an alternative to traditional teacher-centered learning practices in education literature (Brown, 2008; Dewey, 1916). Student-centered instruction is defined as a form of active learning where students are engaged and involved in what they are studying (Brown, 2008). The idea of student-centered instruction is grounded in the work of psychologist Lev Vygotsky (1978), who proposed that children achieve optimal success if instructors act as scaffolds, providing temporary support but allowing children to learn in an experiential and independent manner (Papalia, Olds, & Feldman, 2004). In student-centered instruction, the teacher shares control of the classroom, and students are included in the decision-making processes of the classroom (Brown, 2008). In this way, the planning, teaching, and assessment in a student-centered classroom revolve around the needs and abilities of the students.

Recently, there has been increasing interest in how to incorporate student-centered practices into music education (Brown, 2008; Scott, 2011). Scott (2011) posited that taking a student-centered approach in music education allows students to emerge as independent musicians, actively engaged in their work as players, composers, improvisers, and listeners. While research on student-centered instruction is limited, findings suggest student-centered instruction is a promising avenue for increasing student
engagement and interest in music (Abrahams, 2005; Chen-Hafteck, 2007; Gluschankof & Kenney, 2011; Niland, 2009). For example, in a review on child-centered curriculum in early childhood music education, engaging in free musical play drew greater engagement and persistence from young musicians compared to teacher-led group music making (Niland, 2009).

Music education researcher Patrick Freer has recently examined implementing a student-centered stance in performance ensembles. Freer (2008) conducted a study focused on how the use of scaffolding language, defined as sequential language patterns that affirm students’ progress and encourage autonomy, impacted middle school choral students’ self-reported affect, challenge, and skill. Results showed that students reported higher levels of challenge and skill (often referred to as “flow experience”) during rehearsals with more frequent usage of scaffolding language. In a subsequent study, Freer (2009) also found that increased scaffolding language led to considerably less instances of student off-task behavior. Findings from this line of research suggests that student-centered instruction is associated with positive student behavioral and musical performance outcomes.

To date, only one known study has been published that directly investigated the link between student-centered instruction and motivation to engage in music. Tseng and Chen (2010) examined the impact of instructional strategy (instructor-led versus student-led) on the quality of musical compositions written by 122 elementary children who had used computer-based composition software. In this study, instructor-led learners outperformed student-led learners on creativity and organization of their compositions, as assessed by “music domain experts,” contrary to author hypotheses. Authors posited that
the student-led learners in this study (3rd and 5th graders) needed more time to explore the music and software in order for their compositions to truly benefit from a student-led approach. In line with author hypotheses, student-led learners reported significantly less extrinsic motivation than instructor-led learners, supporting the assertion that student-led instruction more strongly supports intrinsic motivation that instructor-led learning.

While only one study to date has directly investigated the impact of student-centered music instruction on student motivation, advocates of student-centered instruction focus on the ability of this learning practice to tailor student instruction to the students’ interests, educational needs, and lives in general (Brown, 2008). In this way, proponents of student-centered learning assert that this approach is associated with intrinsic motivation, in so much as the student is engaging in the learning in a more self-directed, reflective, and personally meaningful approach (Scott, 2011).

**Current dilemmas with student-centered instruction in music education.**

Despite promising results regarding the use of student-centered approaches in music education, a recent survey of middle-school band directors found that directors lean more toward teacher-centered classrooms rather than student-centered classrooms (Bazan, 2011). Directors reported a number of barriers to incorporating student-centered instruction in their ensembles. These barriers included administrative pressures (e.g., requirements to perform specific repertoire at school events), school rules, budgetary constraints (e.g., low student-to-teacher ratios make it difficult to provide adequate preparation and supervision of student-led ensembles), and prioritization of standardized tests. In addition, large class sizes and rehearsal space often negatively impact the effectiveness of student-centered instruction, as many of the student-centered music
education approaches focus on small ensembles. When 70 students in one class period are assigned to one large room, small ensemble experiences are logistically challenging.

Even proponents of student-centered instruction understand the potential drawbacks of solely relying on this kind of approach in music education. If students are allowed too much ownership of the decision-making process in a student-centered instruction context, the lack of guidance from a music educator could lead to performance problems such as insufficient technique, plateaus in learning, frustration, and disillusion (Bersh, 2011). Additionally, there may be limits to the application of student-centered instruction due to the nature of the knowledge that is often required in this learning context (McPhail, 2013). For example, if fifth grade introductory band students were only exposed to student-centered instruction methods when first learning their instruments, it seems likely that they would become frustrated with their lack of technical progress and be more likely to drop out of curricular music.

**Informal learning practices.** Popular music, a commonly practiced genre outside of the classroom, has seen a rise in popularity in the formal learning environments of schools (Folkestad, 2006). Despite this trend, the practices used to learn popular music have not been similarly integrated into the school setting (Folkestad, 2006). These practices, known as informal learning practices (Green, 2002), share few of the defining features of its traditional counterpart. Green (2006) asserts that informal learning practices distinguish themselves through five main characteristics. Informal learners typically (a) choose their own music, (b) copy recordings by ear, and (c) learn in self-made groups. Further, informal learners (d) assimilate skills and knowledge in personal, often haphazard ways without regard for standard curriculum or pedagogical methods,
and (e) integrate listening, performing, improvising and composing, with an emphasis on creativity throughout the learning process. Informal learning practices, if integrated into the classroom, could be seen as a specific type of student-centered learning, given the focus on individual choices in the music making process. However, informal learning processes are a distinct type of musical learning that is defined beyond general student-centered learning.

Informal learning practices have been shown to include more than just musical aspects (Fornas, Lindberg, & Sernhede, 1995). For example, the formation of personal identity is a common secondary outcome of informal learning practices (Fornas et al., 1995). Further, while practitioners of popular music established these practices, they can most certainly be applied to music outside of its original genre (Green, 2006). Indeed, Schippers and Campbell (2012) have asserted that music from many different cultures around the globe utilize aspects of informal learning, and that even American schoolchildren often rely on informal learning practices when acquiring children’s songs across a variety of settings.

An Argument for the Integration of Teacher-Centered and Informal Learning Practices

It is not fair to say that traditional learning practices only take place in the classroom and informal learning practices only take place outside of school (Folkestad, 2006). Traditional and informal learning practices are both aspects of the phenomenon of learning music, regardless of where it takes place. Many scholars believe that informal and traditional learning practices should both be taught in schools, rather than having traditional learning practices monopolize the classroom, in order to prepare students for
life-long music making. In the previously mentioned study on rock musicians conducted by Green (2002), participants noted that traditional music education settings had not fully recognized, rewarded, or helped them to pursue the popular music knowledge and skills these musicians were developing outside of the classroom. This finding further asserts the need to find effective ways of integrating these practices into the classroom, as many researchers around the world have advocated (Allsup, 2003; Georgii-Hemming & Westvall, 2010; Green, 2008b; Karlsen, 2010). Other researchers have similarly advocated for a stronger focus on informal learning and associated practices within a traditional teacher-centered framework, such as incorporating instruction on composition and improvisation (Finney & Philpott, 2010; Greher, 2008; Rodriguez, 2009; Wright & Kanellopoulos, 2010).

A growing body of qualitative research suggests many benefits of incorporating informal learning practices into traditional secondary music education curriculum, including increasing student group cooperation, peer-directed learning, autonomy, leadership, and personal musical identity (Abrahams et al., 2011; Allsup, 2003; Lebler, 2008). Additionally, informal learning techniques have been found to increase confidence, practicing frequency, and school ensemble engagement in secondary school students (Bersh, 2011). Informal learning techniques have also been shown to diversify student strategies for engaging in music learning (e.g., encouraging students to copy recordings by ear rather than relying solely on musical notation; Bersh, 2011). Specific research on the effects of being able to choose one’s own music – a central tenet of informal learning – has also shown the benefits of this approach. Specifically, in a case study of a young beginning clarinetist, the student was more likely to engage in practicing strategies
typical of advanced stages of development (such as silent fingering, silent thinking, and singing) when practicing self-selected repertoire compared to when practicing instructor-selected repertoire (Renwick & McPherson, 2002). In a sample of 40 first-year university music education students, the presence of an informal setting for music learning raised students’ awareness of the importance of reflective self-assessment (Feichas, 2010).

Taken together, these qualitative research studies suggest that informal learning practices are associated with a number of student-related benefits, both in terms of advancing student musicality and increasing student engagement and self-awareness.

Implicit in the encouragement toward integrating informal learning practices with teacher-centered learning practices is the assumption that informal learning practices enhance student involvement and student motivation (Feichas, 2010; Green, 2006; Jaffurs, 2004). For example, Brandstrom and Hogberg (1998) posited that the haphazard nature of informal learning practices can push students to acquire musical skills at a faster rate than their traditional counterpart, as they emerge from a need experienced by the student. Further, Gamble (1984) suggested that students are highly motivated to engage in music when their involvement becomes personal, as with improvisation and composition. This assertion is in line with the importance of autonomy in informal learning practices, in that student autonomy generates student ownership of the musical experience.

A notable study on adolescents’ experience of musical learning that Ericsson (2002; from Folkestad, 2006) conducted suggests that students strongly desire that their traditional music education mirror music activities that take place outside of school. Specifically, students asserted that they would be more interested in traditional teacher-centered music education if issues such as student preference and interpretation were
largely left to the students. Further, students stated that the role of the teacher should be to provide help to the students by giving them tools for expression, such as training skills and providing a suitable space for making music. These student assertions are in line with Green’s (2006) description of informal learning practices, and allude to the importance of making a space for them in the classroom alongside teacher-centered learning.

A few qualitative research studies have investigated the implied connection between informal learning practices and student motivation. After reviewing qualitative interviews of 200 secondary music students engaged in informal learning practices and their music teachers, Green (2008b) concluded that both students and teachers noticed an increase in student motivation following informal learning. However, this qualitative analysis did not shed light on the type of motivation (intrinsic, extrinsic, or somewhere in between) that was fostered by an informal learning environment. Similarly, two separate studies investigated student motivation to engage in a guitar class that used informal learning techniques and found that personal interest and enjoyment in the subject was the most salient motivator (Fraser, 2013; Seifried, 2006). While engaging in a musical activity purely for personal interest and enjoyment has been associated with intrinsic motivation, the lack of a comparison group of students engaged in traditional learning makes it difficult to assert that an informal learning environment is uniquely associated with increased intrinsic motivation.

In a recent quantitative study, MacIntyre and Potter (2014) compared the responses of piano players \(n = 307\) and guitar players \(n = 292\) on questionnaires related to various motivational constructs, including dominant motivation type, perceived
competence, musical self-esteem, effort, desire to learn, and willingness to play. Results showed that, relative to guitar players, piano players reported significantly greater externally introjected regulation, as well as significantly decreased perceived competence and willingness to play. Authors argued that these findings reflected the more traditional teacher-centered learning environment of piano players relative to guitar players. In this way, authors implied that the informal learning environment inherent in guitar instruction fostered increased intrinsic motivation. Study results also showed that, regardless of instrument type, musicians that reported composing their own music indicated significantly more motivational intensity. Authors again asserted that this finding reflected the superiority of tasks related to informal learning, such as independent composition, to promote increased motivation. As in previously discussed qualitative studies, MacIntyre and Potter (2014) implied – but did not directly investigate – a positive connection between informal learning practices and student motivation.

**Applying Self-Determination Theory to Music Learning Practices**

Current research on music learning both in and out of the classroom seems to suggest that exclusively utilizing teacher-centered learning practices may work against creating a sense of autonomy, challenge one’s sense of competence, and provide less opportunity for relatedness, all of which can negatively impact a student’s level of intrinsic motivation. In the framework of SDT, teacher-centered music education may decrease students’ sense of autonomy, and subsequently their intrinsic motivation, as students are often not permitted to define “real” music for themselves (Scott, 2011). Additionally, having a defined “master musician” as the leader of the ensemble may decrease nonverbal and verbal communication between students (Jaffurs, 2004), thus
decreasing intrinsic motivation by restricting the student’s sense of relatedness. Finally, the limited opportunities in traditional ensembles for students to assume a lead role in facilitating musical interpretation and performance (Campbell, 1995; Green, 2006) could decrease student competence, and student intrinsic motivation in turn.

Though empirical research literature on this topic is scarce, intrinsic motivation and informal learning practices seem to share strong theoretical foundations. From an SDT framework, tenets of informal learning practices easily map onto the psychological needs of autonomy, competency, and relatedness that Deci and Ryan (2000) identify as essential to fostering intrinsic motivation. For example, choosing one’s own music would imply a fostering of students’ autonomy. Similarly, playing in self-made groups and assimilating musical skills and knowledge in personal, haphazard ways may increase student relatedness, as these activities may more effectively foster an environment where others are supportive and responsive to student efforts. Finally, an integration of listening, performing, improvising and composing, with an emphasis on creativity, may more directly increase musical competence across a variety of musical domains, thereby enhancing intrinsic motivation. Further research connecting these two concepts is warranted given their similar theoretical footings.

**Summary**

Research on SDT (Ryan & Deci, 2000) suggests that there are many types of motivation, and that these motivation types reflect the degree to which an individual’s behavioral regulation to engage in an activity is self-directed and autonomous (intrinsic) versus other-directed and externally controlled (extrinsic). Music education literature suggests that intrinsic motivation has been associated with a variety of positive outcomes,
including increased student-report of desire to learn and self-competence (MacIntyre & Potter, 2014), increased student effort in performance and practice (Comeau et al., 2014; Schatt, 2013; Schmidt, 2005), increased creativity and musical technicality during student performance (Eisenberg & Thompson, 2003), and stronger positive student opinion of life-long music making (Legutki, 2010). Nevertheless, more research is needed that explores the type of teaching practices that are most effective in increasing student motivation. Proponents of informal learning practices assert that an informal learning environment fosters intrinsic motivation (Green, 2008a), and these practices may more explicitly promote autonomy, competency, and relatedness throughout the learning process compared to traditional teacher-centered approaches. To date, no studies have directly and quantitatively compared student motivation in the context of teacher-centered versus informal learning. As such, the current study sought to provide preliminary evidence for a relationship between specific learning practices (informal versus teacher-centered) and student motivation to engage in music making.
Chapter 3

Methodology

Purpose of the Study

The purpose of this research was to further understand the link between specific learning practices and high school student motivation to engage in music making, as well as how these two constructs influence actual student engagement in music making activities. Specifically, I compared the types and levels of motivation and music engagement across two groups of high school students: (a) students enrolled in an extra-curricular music ensemble that strongly incorporates informal learning practices into the ensemble experience, and (b) students exclusively enrolled in a curricular music ensemble that primarily uses traditional, teacher-centered learning practices.

Research Questions

The following research questions were investigated:

1. Relative to those students receiving teacher-centered learning practices (TCLP), do students exposed to informal learning practices (ILP) report significantly different levels of intrinsic motivation, identified regulation, introjected regulation, and/or extrinsic regulation, as measured by the Music Self-Determination Scale (MSDS; MacIntyre & Potter, 2014)?

2. Does the percentage of students who report music making activities outside the classroom differ between groups (students exposed to TCLP vs. students exposed to ILP)?

3. Does the percentage of students who report a desire to be involved in music making activities outside the classroom differ between groups (TCLP vs. ILP)?
4. Do students exposed to TCLP have different scores, on average, on the Willingness to Play Scale (WPS; MacIntyre & Potter, 2014) relative to students receiving ILP?

5. Across groups, is there a unique combination of music instruction practice (teacher-centered learning practices versus informal learning practices) and student motivation type (intrinsic, identified, introjected, or extrinsic motivation) that is more strongly related to student-reported desire to engage in music making outside of a school setting?

6. Across groups, is there a unique combination of music instruction practice and student motivation type that is more strongly related to student-reported engagement in music making activities outside of a school setting?

7. Across groups, is there a unique combination of music instruction practice and student motivation type that is more strongly related to student-reported willingness to play music in front of others, as measured by the WPS (MacIntyre & Potter, 2014)?

Participants

Participants in this study included 43 students in grades 9 through 12 enrolled in music programming at a public suburban high school located in Northeast Ohio. Students were recruited from both the band and orchestra programs at this school, and there were no exclusion criteria based on gender, ethnicity, or the type of musical instrument played by the student.

Sixteen adolescents in grades 9 through 12 were recruited from a 41-member extra-curricular music ensemble that strongly incorporates informal learning practices
(ILP) into the ensemble experience. This ensemble in its original form was started in 2002, and was created in order to allow students to play music of their choosing in a rock ensemble setting. In its current form, this ILP ensemble includes two electric string quartets, a double acoustic string quintet, two electric guitars, an electric bass, electric keyboards, a drum set, and auxiliary percussion. This ILP ensemble is an auditioned group, and all students are required to take private lessons on the instrument they play in the group. Additionally, string players in this ILP ensemble are required to be members of at least one curricular orchestral ensemble. Students in this ensemble rehearse all together once per week for four hours. All students in this ILP ensemble are also required to participate in weekly 90-minute sectionals.

This ensemble incorporates informal learning practices in a variety of ways. For example, students have a larger influence on music programming. In fact, if students come to rehearsal with an idea for a song they would like the ensemble to play, they are encouraged to attempt to write out parts themselves for each instrument in the ensemble. The director of the ensemble acts as a “coach” of the group, helping to facilitate communication and guide discussion among the student members of the ensemble, but consciously and deliberately stepping out of the role of “master musician.” Students often rely on listening to recordings to learn parts rather than solely relying on sheet music; this is especially true for students in the rhythm section. Students learn musical techniques as it is relevant to what they need to know for a specific piece, rather than following a strict or pre-determined pedagogy. Improvisation and composition are both strongly encouraged and seen as necessary skills that individuals can use to support the ensemble’s success as a whole.
A comparison group of 27 adolescents in grades 9 through 12 was recruited from the high school’s band ensembles, which are comprised of 157 total students. All of the curricular band ensembles have a similar instrumentation (that which is required to play canonical wind band repertoire), which includes flutes, oboes, bassoons, clarinets, saxophones, trumpets, horns, trombones, euphoniums, tubas, and mallet and battery percussion. These groups, like the ILP orchestral ensemble, are auditioned. Students in these ensembles rehearse for approximately 45 minutes during each school day. Students enrolled in these curricular band ensembles are also required to be involved in marching band and perform at concerts and events outside of the school day.

These curricular band ensembles primarily use traditional, teacher-centered learning practices (TCLP). Specifically, the band director chooses all the music, assigns all parts, and directs interpretation of all musical pieces. Traditional methods of assessment, such as scale and chair tests, are used to measure student progress. Student improvisation and composition are rarely emphasized or discussed.

Measures

**Self-determination.** In order to accurately assess student motivation to engage in music making activities, a valid and reliable instrument was needed. The *Learning Self-Regulation Questionnaire* (LSRQ; Williams & Deci, 1996) is a well-validated self-report measure of motivation, in which items are written to represent both other-controlled (i.e., external and introjected) and self-determined (i.e., integrated and intrinsic) reasons for engaging in an activity. In the original study, the LSRQ was used to investigate the types and levels of motivation associated with participation in a medical interviewing course among 181 second-year medical students. Responses in the original LSRQ were recorded
on a 5-point Likert scale. In the sample from the original study, the LSRQ exhibited good construct validity. All subscales of the LSRQ were positively correlated with subscales measuring similar constructs on the *General Causality Orientations Scale* (GCOS; Deci & Ryan, 1995), a well-validated measure of an individual’s typical motivational orientation (Williams & Deci, 1996). The LSRQ also had suitable reliability, with Cronbach’s *a* for internal consistency ranging from 0.70-0.80 across LSRQ subscales (Williams & Deci, 1996).

In a recent study on motivational differences between piano and guitar players, 16 items from the LSRQ were adapted for use with musicians (MacIntyre & Potter, 2014). MacIntyre and Potter separated these 16 items into four subscales that correspond to components of motivation and associated self-regulatory processes: (a) intrinsic regulation, (b) integrated regulation, (c) introjected regulation, and (d) extrinsic regulation. These subscales correspond with the four regulatory dimensions outlined in the SDT framework, as described in Chapter 2. This scale will be referred to as the *Musical Self-Determination Scale* (MSDS; see Appendix A). Responses on the MSDS were coded on a 7-point Likert scale, ranging from 1 (*not at all true*) to 7 (*very true*). Each statement of the MSDS corresponds to the prompt: *There are a variety of reasons why people play music regularly. Please indicate how true each of these statements are for why you play music regularly.*

*Intrinsic Regulation Subscale.* This subscale on the MSDS focuses on students’ motivation to engage in music making activities for purely self-determined reasons, such as an inherent interest and sense of enjoyment from the activity itself (see Table 3.1). Higher scores on this subscale reflect a stronger endorsement of intrinsic regulation to
engage in music making activities. Previous research on this subscale in a sample of adult musicians yielded moderately strong reliability, with a Chronbach’s $a$ of 0.65 for piano players and 0.63 for guitar players (MacIntyre & Potter, 2014).

Table 3.1

**MSDS items from the intrinsic regulation subscale**

<table>
<thead>
<tr>
<th>Item</th>
<th>Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Because I enjoy playing music.</td>
</tr>
<tr>
<td>8</td>
<td>Because it is a challenge to accomplish my musical goals.</td>
</tr>
<tr>
<td>10</td>
<td>Because it’s fun.</td>
</tr>
<tr>
<td>15</td>
<td>Because it is interesting to see my own improvement.</td>
</tr>
</tbody>
</table>

*Integrated Regulation Subscale.* This MSDS subscale measures the extent to which an individual’s motivation for engaging in music making activities arises from personal values and gaining a sense of meaning from engaging in the activity (see Table 3.2). Higher scores on this subscale reflect a stronger endorsement of integrated regulatory strategies to engage in music making activities. Previous research on this subscale has shown moderately strong reliability in a sample of guitarists ($a = 0.61$), and strong reliability in a sample of pianists ($a = 0.72$; MacIntyre & Potter, 2014).

Table 3.2

**MSDS items from the integrated regulation subscale**

<table>
<thead>
<tr>
<th>Item</th>
<th>Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Because I feel like it’s the best way to help myself.</td>
</tr>
<tr>
<td>9</td>
<td>Because I believe playing music helps me feel better.</td>
</tr>
<tr>
<td>12</td>
<td>Because it feels important to me personally to accomplish this goal.</td>
</tr>
<tr>
<td>16</td>
<td>Because improving my playing is an important value for me.</td>
</tr>
</tbody>
</table>

*Introjected Regulation Subscale.* This subscale on the MSDS focuses on the extent to which engaging in music making activities is regulated for the purposes of
avoiding anxiety or guilt, gaining approval, or enhancing pride (see Table 3.3). Higher scores on this subscale reflect a stronger endorsement of introjected regulation to engage in music making activities. Previous research on this subscale in a sample of adult musicians has shown strong reliability for both piano players (Chronbach’s \(a = 0.76\)) and guitar players \(a = 0.82;\) MacIntyre & Potter, 2014).

Table 3.3

*MSDS items from the introjected regulation subscale*

<table>
<thead>
<tr>
<th>Item</th>
<th>Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Because I would feel bad about myself if I did not.</td>
</tr>
<tr>
<td>4</td>
<td>Because I would feel like a failure if I did not.</td>
</tr>
<tr>
<td>6</td>
<td>Because people would think I’m a bad musician if I did not.</td>
</tr>
<tr>
<td>13</td>
<td>Because I feel guilty if I do not practice music regularly.</td>
</tr>
</tbody>
</table>

*Extrinsic Regulation Subscale.* This MSDS subscale measures the degree to which students’ motivation to engage in music making activities is solely a function of external contingencies (see Table 3.4). Higher scores on this subscale reflect a stronger endorsement of extrinsic regulation strategies to engage in music making activities. Previous research on this subscale in a sample of adult musicians yielded strong reliability, with a Chronbach’s \(a\) of 0.79 for piano players and 0.73 for guitar players (MacIntyre & Potter, 2014).

Table 3.4

*MSDS items from the extrinsic regulation subscale*

<table>
<thead>
<tr>
<th>Item</th>
<th>Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Because others would be angry at me if I did not.</td>
</tr>
<tr>
<td>7</td>
<td>Because I feel like I have no choice about playing music; others make me do it.</td>
</tr>
<tr>
<td>11</td>
<td>Because I worry that I would get in trouble with others if I did not.</td>
</tr>
<tr>
<td>14</td>
<td>Because I want others to acknowledge that I am doing what I have been told I should do.</td>
</tr>
</tbody>
</table>
For the current study, all four subscales of the Musical Self-Determination Scale (MSDS; MacIntyre & Potter, 2014) were used to measure student’s motivation to engage in musical activities. While these subscales have shown strong reliability in adult populations, these subscales have not been previously used to measure motivation in adolescents. The measure was not modified in any way, and permission for use of this measure was obtained prior to the beginning of the study via e-mail correspondence with Dr. MacIntyre (see Appendix B).

Musical Engagement. The current study also investigated how informal learning practices and student motivation influence student engagement in music making activities outside the school setting. Musical engagement was measured in two different ways. First, students answered yes or no to two statements:

1. I currently sing or play in a music group (or jam by myself) outside the classroom.
2. I wish I was playing or singing in a music group (or jamming by myself) outside the classroom.

These statements assessed student interest in engaging in music making activities outside of school (see Appendix C for student survey). Their responses to these questions allowed the researcher to classify students across groups into the following dichotomous categories:

1. Students who are already involved in music making outside the classroom (those who responded ‘yes’ to statement 1 above) versus students who only participate in curricular music making (those who responded ‘no’ to this statement).
2. Students who are not yet involved in music making outside the classroom, but who desire to be engaged in this type of activity (those who responded ‘yes’ to statement 2 above), versus students who deny a desire to engage in music making outside a curricular setting (those who responded ‘no’ to this statement).

Being able to group students in these dichotomous categories allowed the researcher to investigate whether student motivation and/or exposure to informal versus teacher-centered learning practices influenced student interest in engaging in music making activities outside the school setting.

Second, students completed the Willingness to Play Scale (WPS; MacIntyre & Potter, 2014). See Appendix D for a copy of this questionnaire. This 9-item scale was adapted from the Willingness to Communicate Scale (WTC; McCroskey, 1992), which measures the degree to which an individual approaches or avoids the initiation of communication in everyday life. Responses in the original WTC scale were recorded on a 100-point scale. Participants were asked to indicate the percent of the time they would choose to communicate in each of 20 different social situations. In research on the WTC scale across a number of large college and adult samples, the WTC has exhibited strong reliability, with Cronbach’s $a$ for internal consistency ranging from 0.86-0.95 (McCroskey, 1992). In these samples, the WTC scale has also exhibited good content validity, construct validity, and predictive validity (McCroskey, 1992).

MacIntyre and Potter (2014) adapted the WTC scale to create the Willingness to Play Scale (WPS), a self-report measure that was used for the current study. The WPS measures an individual’s eagerness to perform music in formal, informal, and neutral settings in front of others. Responses are scored on a 100-point scale ranging from 1 (I
would never feel like playing) to 100 (I would always feel like playing). Higher scores reflect stronger willingness to play music in general. Previous research on this subscale in a sample of adult musicians yielded excellent reliability, with a Chronbach’s $a$ of 0.95 for piano players and 0.94 for guitar players (MacIntyre & Potter, 2014). No previous research has used this measure with an adolescent sample or with instruments associated with school music programs.

**Procedure**

**Student survey administration.** Following Institutional Review Board approval for this study, a letter of introduction and Intent to Participate form (see Appendix E) was sent to the suburban high school’s orchestra and band directors. The letter outlined the parameters of participation and included information about a student incentive to participate. Specifically, all students who returned their survey and permission forms were entered into a random drawing for one of five $20$ iTunes gift cards. A sample survey was also sent.

After Intent to Participate forms were received from both the orchestra director and band director at the suburban high school, the researcher mailed student surveys, student assent forms, and guardian consent forms to each director for distribution to their students. All forms had a pre-printed label with a student-specific code (letter designation for music groups, plus a number designation for student) attached to (a) the first page of the survey instrument, (b) the student assent form, and (c) the guardian consent form. In addition, a postage-paid United Postal Service (UPS) shipping label, with shipping confirmation, was included for surveys to be returned.
A script, including instructions for distributing and completing the surveys and consent/assent forms (see Appendix F), was provided to both directors. When passing out the survey and consent/assent forms, the ensemble director read aloud this script, which specified that participation in the research was voluntary and that there were no negative consequences for a student who did not wish to participate. The director script also specified the importance of having the adolescent’s guardian sign the consent form (see Appendix G), as well as the student signing and turning in the student assent form (see Appendix H). Finally, the director instructed students to return the survey, consent forms, and assent forms at the next ensemble rehearsal.

When students completed the materials, they showed the ensemble director their completed forms, placed them in a return box, and then requested that their teacher place their name on the list of students eligible for the $20 iTunes gift card drawing. While students did show their director the completed forms in order to be eligible for the gift card, the director did not scrutinize or score any of the measures for this study, thus maintaining the confidentiality of the participants. The director continued collecting surveys for 14 days after the introduction of the survey materials, in order to collect as many surveys as possible. Surveys, consent/assent forms, and the ensemble director’s list of student’s eligible for the incentive were all returned within 21 days of being received by the ensemble directors.

After receiving all completed surveys, a drawing for the student gift cards was held. The researcher notified the directors by email the names of the students in their ensembles who won. The researcher then sent the ensemble directors gift cards with student names written on them, for teachers to distribute to the winners.
Anonymity and confidentiality. Many steps were taken in order to maintain anonymity and protect the confidentiality of student participants. Written data was stored in a locked filing cabinet at the researcher’s home. Electronic data, including SPSS files related to this study and email correspondence with ensemble directors, was stored in a password-encrypted external hard drive. This hard drive was also stored in a locked filing cabinet at the researcher’s home. No names or personal contact information were collected from student participants or their guardians at any time.

Analysis

Data from the student surveys was entered into SPSS statistical software for analysis. Descriptive statistics were calculated for all demographic information (e.g., gender, age, grade, and ethnicity), as well as for all questionnaire scales and subscales. Preliminary correlations were also run between demographic variables, Music Self-Determination Scale (MSDS) subscales, and Willingness to Play Scale (WPS) scores. This step was completed in order to determine whether any demographic variables were significantly correlated with outcome variables, and consequently required inclusion as covariates in the analyses. Data was also mined for outliers, in order for assumptions of normal distribution of the data to be upheld throughout my analyses. Finally, power analyses through G*Power (Faul, Erdfelder, Buchner, & Lang, 2009) were run to determine whether the sample size of the current study was sufficient to detect significant differences between groups, assuming two tails and an alpha level of 0.05.

Once analyses were finalized based on the results from preliminary correlations, outlier calculations, and power analyses, t-tests were calculated comparing students exposed to informal learning practices (ILP) with students who primarily exposed to
teacher-centered learning practices (TCLP). T-tests were only run comparing groups on variables that exhibited sufficient power in our preliminary power analyses.

Multivariate regression analyses were then run predicting a student’s stated engagement in music making activities outside of school from the interaction between music learning practice (ILP versus TCLP) and student motivation. Additionally, multivariate regressions were run predicting student scores on the Willingness to Play Scale from the interaction between music learning practice and student motivation. Again, only those multivariate regression analyses that exhibited sufficient power in our preliminary power analyses were run. Significant interactions found in the multivariate regression analyses were further investigated using a Multiple Linear Regression two-way interaction tool developed by Preacher, Curran, & Bauer (2006). For each significant interaction, simple slopes were computed in order to determine appropriate interpretation of the interaction effect (see Preacher et al., 2006).
Chapter 4  

Results  

Quantitative data was compiled from participant responses to surveys, the Music Self-Determination Scale (MSDS; MacIntyre & Potter, 2014), and the Willingness to Play Scale (WPS; MacIntyre & Potter, 2014). The quantitative data was analyzed through various statistical processes. This chapter will describe: (a) the descriptive statistics depicting the participants, (b) the results of outlier calculations and preliminary correlations, as well as a description of the power analyses that were used to clarify and finalize the analysis plan, and (c) the results of each power analysis in the context of the specific research question for which each power analysis was run, as well as the analysis of the data for each of the seven research questions.

Descriptive Statistics  

Descriptive statistics from the data for the entire sample \((N = 43)\), as well as descriptive statistics for both groups (ILP and TCLP) regarding demographic variables, self-determination variables, and musical engagement variables, are shown in Table 4.1.

Table 4.1  

Descriptive statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Entire Sample</th>
<th>ILP Group</th>
<th>TCLP Group</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Demographics</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Male</td>
<td>48.8%</td>
<td>43.8%</td>
<td>51.9%</td>
</tr>
<tr>
<td>% Female</td>
<td>51.2%</td>
<td>56.3%</td>
<td>48.1%</td>
</tr>
<tr>
<td>% Caucasian</td>
<td>83.3%</td>
<td>75%</td>
<td>88.5%</td>
</tr>
<tr>
<td>% Minority Status</td>
<td>16.7%</td>
<td>25%</td>
<td>11.5%</td>
</tr>
<tr>
<td>Mean Age (SD)</td>
<td>16.30 (1.12)</td>
<td>16.50 (1.09)</td>
<td>16.19 (1.14)</td>
</tr>
<tr>
<td>Mean Grade (SD)</td>
<td>10.81 (0.98)</td>
<td>11.06 (0.93)</td>
<td>10.67 (1.00)</td>
</tr>
<tr>
<td><strong>Self-Determination</strong></td>
<td>Mean (SD)</td>
<td>Mean (SD)</td>
<td>Mean (SD)</td>
</tr>
<tr>
<td>Intrinsic Regulation</td>
<td>21.95 (5.40)</td>
<td>22.69 (4.84)</td>
<td>21.52 (5.75)</td>
</tr>
<tr>
<td>Integrated Reg.</td>
<td>20.01 (5.88)</td>
<td>20.28 (6.29)</td>
<td>19.85 (5.74)</td>
</tr>
</tbody>
</table>
This table will serve as a reference for interpretation of all preliminary analyses, as well as for all analyses related to each of the seven research questions.

### Preliminary Analyses

As a first step, outcome variables for which a normal distribution of data was expected (e.g., participant scores on self-determination scales and willingness to play scale) were investigated to determine whether any outlier data points were present. An outlier is defined as an observation point that is very distant from other observations. Statistically, assuming a normal distribution, an outlier is identified by first defining the interquartile range of the data: the range of the central 50% of the data points. This range is computed by subtracting the data point at the 25th percentile of the overall data from the data point at the 75th percentile. Once this interquartile range is defined, upper and lower “fences” of the data can be identified. The upper fence is calculated by adding 1.5 times the interquartile range to the data point at the 75th percentile. The lower fence is calculated by subtracting 1.5 times the interquartile range from the data point at the 25th percentile. Individual data points that exist outside of these upper and lower fences are generally considered outliers (Ellison, Farrant, & Barwick, 2009).

Upper and lower fences were calculated by the method described above for all five outcome variables for which a normal distribution was expected: intrinsic regulation, integrated regulation, introjected regulation, extrinsic regulation, and willingness to play.
For all five of these variables, no individual data points fell beyond the upper or lower fences, suggesting that the current data does not include any outliers. As a result of these preliminary analyses, no individual data points were removed for the current analyses.

Next, correlations were run between relevant outcome variables (e.g., learning style group, self-determination scales, and musical engagement variables) and possible control variables (e.g., participant demographics). I specifically examined whether participant gender, age, grade, or race were significantly correlated with any of the outcome variables measured (see results in Table 4.2). Race was coded as a two-category variable based on the participant’s self-reported race: (a) Caucasian and (2) underrepresented minority status (all other races reported).

Table 4.2

*Correlations between learning style group, self-determination scales, musical engagement variables, and participant demographics*

<table>
<thead>
<tr>
<th></th>
<th>Participant Demographics</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Gender</td>
<td>Age</td>
<td>Grade</td>
<td>Race</td>
</tr>
<tr>
<td>Learning Style Group (ILP vs. TCLP)</td>
<td>0.078</td>
<td>0.137</td>
<td>0.197</td>
<td>0.175</td>
</tr>
<tr>
<td><strong>Self-Determination Scales:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intrinsic Regulation</td>
<td>0.061</td>
<td>-0.076</td>
<td>-0.011</td>
<td>-0.242</td>
</tr>
<tr>
<td>Integrated Regulation</td>
<td>-0.030</td>
<td>-0.017</td>
<td>0.038</td>
<td>-0.175</td>
</tr>
<tr>
<td>Introjected Regulation</td>
<td>0.098</td>
<td>0.027</td>
<td>0.058</td>
<td>0.206</td>
</tr>
<tr>
<td>Extrinsic Regulation</td>
<td>0.181</td>
<td>-0.035</td>
<td>-0.046</td>
<td>0.265</td>
</tr>
<tr>
<td><strong>Musical Engagement Variables:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Desire to Play</td>
<td>0.123</td>
<td>0.199</td>
<td>0.235</td>
<td>-0.078</td>
</tr>
<tr>
<td>Actual Engagement</td>
<td>0.114</td>
<td>0.104</td>
<td>0.032</td>
<td>-0.258</td>
</tr>
<tr>
<td>Willingness to Play Scale</td>
<td>0.001</td>
<td>0.201</td>
<td>0.192</td>
<td>-0.099</td>
</tr>
</tbody>
</table>

None of the demographic variables investigated were significantly correlated with any of the salient outcome variables: all p-values for all correlations were above 0.05. As a
result of these preliminary correlations, no demographic covariates were included in any of the final analyses.

Finally, post-hoc power analyses were run using G*Power (Faul et al., 2009) to determine whether the sample size of the current study (43 total participants; 16 ILP participants and 27 TCLP participants) was sufficient to detect significant differences between groups, assuming two tails and an alpha level of 0.05. For the current study, computed power was required to reach 0.80 or higher in order for subsequent t-test and multivariate regression analyses to be considered valid and capable of detecting meaningful results. Reaching a power of 0.80 is the generally accepted power level in social and behavioral sciences research, and has been established as such for the past three decades (Cohen, 1988). Relevant power analyses were run for each research question proposed in the current study. For each power analysis related to using t-tests to compare means between ILP and TCLP groups, the following information was entered: sample size, the mean of the relevant outcome variable for each group (ILP versus TCLP), and the standard deviation of the relevant outcome variable for each group. For each power analysis related to the proposed multivariate regressions, the following information was entered: variance explained by the specific predictor variables and residual variance. Results of each power analysis are summarized below in the context of the specific research question for which each power analysis was run.

Analysis and Results of Research Questions

Research question 1: Relative to those students receiving teacher-centered learning practices (TCLP), do students exposed to informal learning practices (ILP) report significantly different levels of intrinsic regulation, integrated regulation,
introjected regulation, and/or extrinsic regulation, as measured by the Music Self-Determination Scale (MSDS; MacIntyre & Potter, 2014)?

Four separate power analyses were conducted comparing ILP participants with TCLP participants on each Music Self-Determination subscale (intrinsic regulation, integrated regulation, introjected regulation, and extrinsic regulation). All power analyses assumed (a) the use of a t-test to detect a difference between two independent means, (b) two tails, (c) an alpha of 0.05, and (d) a sample size of 16 ILP participants and 27 TCLP participants. Results of these power analyses are summarized in Table 4.3 below:

Table 4.3

Power analysis results for t-tests comparing ILP and TCLP groups on self-determination scales

<table>
<thead>
<tr>
<th>Self-Determination Scale</th>
<th>Achieved Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intrinsic Regulation</td>
<td>0.17</td>
</tr>
<tr>
<td>Integrated Regulation</td>
<td>0.08</td>
</tr>
<tr>
<td>Introjected Regulation</td>
<td>0.25</td>
</tr>
<tr>
<td>Extrinsic Regulation</td>
<td>0.18</td>
</tr>
</tbody>
</table>

Results of these analyses suggest that the current sample size is not sufficient to detect meaningful differences between groups on the self-determination scales. As a result, t-tests comparing ILP participants and TCLP participants on intrinsic regulation, integrated regulation, introjected regulation, and extrinsic regulation were not computed.

**Research question 2:** Does the percentage of students who report music making activities outside the classroom differ between groups (students exposed to ILP vs. students exposed to TCLP)?

One power analysis was conducted comparing groups on the percentage of students within each group who reported current engagement in music making activities
outside of school (versus students who only reported engagement in school-affiliated ensembles). This power analysis assumed (a) the use of a t-test to detect a difference between two independent means, (b) two tails, (c) an alpha of 0.05, and (d) a sample size of 16 ILP participants and 27 TCLP participants. Results of this power analysis yielded an achieved power of 0.28, which suggests that the current sample size is not sufficient to detect meaningful differences between ILP and TCLP groups in this domain. As a result, a t-test comparing ILP and TCLP participants on their self-reported musical engagement outside of the classroom was not conducted.

Research question 3. Does the percentage of students who report a desire to be involved in music making activities outside the classroom differ between groups (ILP vs. TCLP)?

One power analysis was conducted comparing groups on the percentage of students within each group who reported a desire to engage in music making activities outside of school (versus students who did not report any desire to engage in music making activities outside of school-affiliated ensembles). This power analysis assumed (a) the use of a t-test to detect a difference between two independent means, (b) two tails, (c) an alpha of 0.05, and (d) a sample size of 16 ILP participants and 27 TCLP participants. Results of this power analysis yielded an achieved power of 0.95, which suggests that the current sample size is sufficient to detect meaningful differences between ILP and TCLP groups in this domain. Subsequently, a t-test comparing ILP and TCLP participants on their self-reported desire to engage in music making outside of the classroom was conducted. This t-test showed a significant difference between groups: significantly more students participating in the ILP group endorsed a desire to engage in
music making activities outside of school compared to students participating in the TCLP group (100% vs. 63%; p = 0.005).

**Research question 4:** Do students exposed to ILP have different scores, on average, on the Willingness to Play Scale (WPS; MacIntyre & Potter, 2014) relative to students receiving TCLP?

One power analysis was conducted comparing the scores of ILP and TCLP participants on the Willingness to Play Scale. This power analysis assumed (a) the use of a t-test to detect a difference between two independent means, (b) two tails, (c) an alpha of 0.05, and (d) a sample size of 16 ILP participants and 27 TCLP participants. Results of this power analysis yielded an achieved power of 0.13, which suggests that the current sample size is not sufficient to detect meaningful differences between ILP and TCLP groups in this domain. As a result, a t-test comparing ILP and TCLP participants on their mean WPS scores was not conducted.

**Research question 5.** Across groups, is there a unique combination of music instruction practice (informal learning practices versus teacher-centered learning practices) and student motivation type (intrinsic, integrated, introjected, or extrinsic motivation) that is more strongly related to student-reported desire to engage in music making outside of a school setting?

Four power analyses were conducted, one for each Music Self-Determination Subscale (intrinsic regulation, integrated regulation, introjected regulation, and extrinsic regulation). These power analyses assumed (a) the use of linear multivariate regression to predict student-reported desire to engage in music making outside a school setting, (b)
two tails, (c) an alpha level of 0.05, and (d) a sample size of 43 total participants. Results of these power analyses are summarized in Table 4.4 below:

Table 4.4

<table>
<thead>
<tr>
<th>Self-Determination Scale</th>
<th>Achieved Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intrinsic Regulation</td>
<td>1.00</td>
</tr>
<tr>
<td>Integrated Regulation</td>
<td>1.00</td>
</tr>
<tr>
<td>Introjected Regulation</td>
<td>0.98</td>
</tr>
<tr>
<td>Extrinsic Regulation</td>
<td>0.91</td>
</tr>
</tbody>
</table>

Results of these analyses suggest that the current sample size is sufficient to meaningfully predict student-reported desire to engage in music-making activities outside the school setting. Consequently, four separate multivariate regressions were run, one for each MSDS scale.

For all regressions, the same model sequence was used. Model 1 included music learning practice group (ILP versus TCLP). Model 2 added the specific self-determination scale (intrinsic regulation, integrated regulation, introjected regulation, or extrinsic regulation) to Model 1. Model 3 added an interaction variable (music learning practice by motivation type) to Model 2. If Model 3 and the interaction variable remained significant, the researcher concluded that a unique combination of music learning practice and student motivation was more strongly related to student desire to engage in music making activities outside of a school setting. Results of these four multivariate regression analyses are summarized in Table 4.5 below. Only results from Model 3 are shown, as this is the only model that yields the interaction term that is relevant to the current research question.
Table 4.5

Multivariate regression results predicting student-reported desire to engage in music-making activities outside a school setting from group status and self-determination variables

<table>
<thead>
<tr>
<th></th>
<th>Beta</th>
<th>S.E.</th>
<th>T-Score</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group</td>
<td>1.55</td>
<td>0.45</td>
<td>3.47</td>
<td>0.00</td>
</tr>
<tr>
<td>Intrinsic Reg.</td>
<td>0.11</td>
<td>0.03</td>
<td>4.12</td>
<td>0.00</td>
</tr>
<tr>
<td>Group x Intrinsic Reg.</td>
<td>-0.06</td>
<td>0.02</td>
<td>-2.82</td>
<td>0.00</td>
</tr>
<tr>
<td>Group</td>
<td>1.61</td>
<td>0.31</td>
<td>5.24</td>
<td>0.00</td>
</tr>
<tr>
<td>Integrated Reg.</td>
<td>0.13</td>
<td>0.02</td>
<td>5.71</td>
<td>0.00</td>
</tr>
<tr>
<td>Group x Integrated Reg.</td>
<td>-0.06</td>
<td>0.02</td>
<td>-2.62</td>
<td>0.00</td>
</tr>
<tr>
<td>Group</td>
<td>0.67</td>
<td>0.30</td>
<td>2.22</td>
<td>0.03</td>
</tr>
<tr>
<td>Introjected Reg.</td>
<td>0.06</td>
<td>0.03</td>
<td>1.67</td>
<td>0.10</td>
</tr>
<tr>
<td>Group x Introjected Reg.</td>
<td>-0.03</td>
<td>0.02</td>
<td>-1.20</td>
<td>0.24</td>
</tr>
<tr>
<td>Group</td>
<td>0.36</td>
<td>0.29</td>
<td>1.23</td>
<td>0.23</td>
</tr>
<tr>
<td>Extrinsic Reg.</td>
<td>0.00</td>
<td>0.04</td>
<td>-0.07</td>
<td>0.94</td>
</tr>
<tr>
<td>Group x Extrinsic Reg.</td>
<td>0.00</td>
<td>0.03</td>
<td>0.05</td>
<td>0.96</td>
</tr>
</tbody>
</table>

As shown above, in the multivariate analysis predicting student-reported desire to engage in music-making activities outside a school setting from group status and intrinsic regulation, there was a significant positive main effect of group on student-reported desire to engage in music-making activities. In line with previously reviewed t-test results (see results for research question 3), significantly more ILP students reported this desire compared to the TCLP group. There was also a significant positive main effect of intrinsic regulation: the higher the student’s level of intrinsic regulation, the more likely the student was to report a desire to engage in music-making activities outside the classroom. Additionally, there was a significant interaction effect for group status and intrinsic regulation on student reported desire to engage in music making.
Further investigation of this interaction effect was conducted using the Multiple Linear Regression two-way interaction tool (Preacher et al., 2006). Graphic representation of the simple slopes calculated to depict this interaction effect is shown in Figure 4.1.

*Figure 4.1*

*Plot illustrating the interaction of group status and intrinsic regulation on student-reported desire to engage in music making activities outside a school setting.*

This figure shows that at low levels of intrinsic regulation, group status significantly impacted student-reported desire to engage in music-making activities outside the classroom, with significantly more ILP students reporting this desire compared to students in the TCLP group. In contrast, at high levels of intrinsic regulation, the type of learning practice did not impact student-reported desire to engage in music-making, as all
students with high intrinsic regulation showed a strong desire to engage in music-making outside the school setting.

Returning to Table 4.5, the multivariate regression analysis that predicted student-reported desire to engage in music-making activities outside a school setting from group status and integrated regulation also yielded a significant interaction effect. This multivariate regression analysis also showed a significant positive main effect of group on student-reported desire to engage in music-making activities. Again, in line with previously reviewed results (see research question 3), significantly more ILP students reported this desire compared to the TCLP group. There was also a significant positive main effect of integrated regulation: the higher the student’s level of integrated regulation, the more likely the student was to report a desire to engage in music-making activities outside the classroom.

To further investigate and interpret the significant interaction effect of group by integrated regulation on student-reported desire to engage in music-making activities outside a school setting, the Multiple Linear Regression two-way interaction tool (Preacher et al., 2006) was used. Graphic representation of the simple slopes calculated to depict this interaction effect is shown in Figure 4.2 below.
Figure 4.2

Plot illustrating the interaction of group status and integrated regulation on student-reported desire to engage in music making activities outside a school setting.

This figure shows that at low levels of integrated regulation, group status significantly impacted student-reported desire to engage in music-making activities outside the classroom, with significantly more ILP students reporting this desire compared to students in the TCLP group. In contrast, at high levels of integrated regulation, the type of learning practice did not impact student-reported desire to engage in music-making, as all students with high integrated regulation showed a strong desire to engage in music-making outside the school setting.

The multivariate regression that included introjected regulation did not show a significant interaction result, nor did the multivariate regression that included extrinsic regulation. As a result, these analyses were not further interpreted or investigated.
**Research question 6.** Across groups, is there a unique combination of music instruction practice and student motivation type that is more strongly related to student-reported actual engagement in music making activities outside of a school setting?

Four power analyses were conducted, one for each MSDS subscale. These power analyses assumed (a) the use of linear multivariate regression to predict student-reported actual engagement in music making outside a school setting, (b) two tails, (c) an alpha level of 0.05, and (d) a sample size of 43 total participants. Results of these power analyses are summarized in Table 4.6 below:

Table 4.6

<table>
<thead>
<tr>
<th>Self-Determination Scale</th>
<th>Achieved Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intrinsic Regulation</td>
<td>0.96</td>
</tr>
<tr>
<td>Integrated Regulation</td>
<td>0.90</td>
</tr>
<tr>
<td>Introjected Regulation</td>
<td>0.56</td>
</tr>
<tr>
<td>Extrinsic Regulation</td>
<td>0.70</td>
</tr>
</tbody>
</table>

Results of these analyses suggest that the current sample size is sufficient to meaningfully predict student-reported actual engagement in music-making activities outside the school setting in two of the four proposed analyses: (1) the multivariate regression including intrinsic regulation, and (2) the multivariate regression including integrated regulation. As a result, only these two multivariate regressions were run.

For both regressions, the same model sequence was used. Model 1 included music learning practice group (ILP versus TCLP). Model 2 added the specific self-determination scale (intrinsic regulation or integrated regulation) to Model 1. Model 3 added an interaction variable (music learning practice by motivation type) to Model 2. If
Model 3 and the interaction variable remained significant, the researcher concluded that a unique combination of music learning practice and student motivation was more strongly related to student actual engagement in music making activities outside of a school setting. Results of these two multivariate regression analyses are summarized in Table 4.7 below. For each multivariate regression that was run, only results from Model 3 are shown, as this is the only model that yields the interaction term that is relevant to the current research question.

Table 4.7

*Multivariate regression results predicting student-reported actual engagement in music-making activities outside a school setting from group status and self-determination variables*

<table>
<thead>
<tr>
<th></th>
<th>Beta</th>
<th>S.E.</th>
<th>T-Score</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group</td>
<td>-0.10</td>
<td>0.67</td>
<td>-0.14</td>
<td>0.89</td>
</tr>
<tr>
<td>Intrinsic Reg.</td>
<td>0.03</td>
<td>0.04</td>
<td>0.66</td>
<td>0.51</td>
</tr>
<tr>
<td>Group x Intrinsic Reg.</td>
<td>0.01</td>
<td>0.03</td>
<td>0.37</td>
<td>0.71</td>
</tr>
<tr>
<td>Group</td>
<td>0.04</td>
<td>0.53</td>
<td>0.08</td>
<td>0.93</td>
</tr>
<tr>
<td>Integrated Reg.</td>
<td>0.02</td>
<td>0.04</td>
<td>0.58</td>
<td>0.57</td>
</tr>
<tr>
<td>Group x Integrated Reg.</td>
<td>0.01</td>
<td>0.03</td>
<td>0.26</td>
<td>0.79</td>
</tr>
</tbody>
</table>

As shown above, neither multivariate regression showed a significant interaction result. As a result, these analyses were not further interpreted or investigated.

**Research question 7.** Across groups, is there a unique combination of music instruction practice and student motivation type that is more strongly related to student-reported willingness to play music in front of others, as measured by the WPS (MacIntyre & Potter, 2014)?

Four power analyses were conducted, one for each MSDS subscale. These power analyses assumed (a) the use of linear multivariate regression to predict student WPS
scores, (b) two tails, (c) an alpha level of 0.05, and (d) a sample size of 43 total participants. Results of these power analyses are summarized in Table 4.8 below:

Table 4.8

*Power analysis results for multivariate regressions predicting student WPS scores*

<table>
<thead>
<tr>
<th>Self-Determination Scale</th>
<th>Achieved Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intrinsic Regulation</td>
<td>1.00</td>
</tr>
<tr>
<td>Integrated Regulation</td>
<td>1.00</td>
</tr>
<tr>
<td>Introjected Regulation</td>
<td>0.40</td>
</tr>
<tr>
<td>Extrinsic Regulation</td>
<td>0.70</td>
</tr>
</tbody>
</table>

Results of these analyses suggest that the current sample size is sufficient to meaningfully predict student WPS scores in two of the four proposed analyses: (1) the multivariate regression including intrinsic regulation, and (2) the multivariate regression including integrated regulation. As a result, only these two multivariate regressions were run.

For both regressions, the same model sequence was used. Model 1 included music learning practice group (ILP versus TCLP). Model 2 added the specific self-determination scale (intrinsic regulation or integrated regulation) to Model 1. Model 3 added an interaction variable (music learning practice by motivation type) to Model 2. If Model 3 and the interaction variable remained significant, the researcher concluded that a unique combination of music learning practice and student motivation was more strongly related to student actual engagement in music making activities outside of a school setting. Results of these two multivariate regression analyses are summarized in Table 4.9 below. For each multivariate regression that was run, only results from Model 3 are shown, as this is the only model that yields the interaction term that is relevant to the current research question.
Table 4.9

*Multivariate regression results predicting student WPS scores from group status and self-determination variables*

<table>
<thead>
<tr>
<th></th>
<th>Beta</th>
<th>S.E.</th>
<th>T-Score</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group</td>
<td>-24.77</td>
<td>19.73</td>
<td>-1.26</td>
<td>0.22</td>
</tr>
<tr>
<td>Intrinsic Reg.</td>
<td>1.25</td>
<td>1.18</td>
<td>1.06</td>
<td>0.30</td>
</tr>
<tr>
<td>Group x Intrinsic Reg.</td>
<td>1.12</td>
<td>0.86</td>
<td>1.30</td>
<td>0.20</td>
</tr>
<tr>
<td>Group</td>
<td>-25.57</td>
<td>16.06</td>
<td>-1.59</td>
<td>0.12</td>
</tr>
<tr>
<td>Integrated Reg.</td>
<td>0.33</td>
<td>1.15</td>
<td>0.29</td>
<td>0.78</td>
</tr>
<tr>
<td>Group x Integrated Reg.</td>
<td>1.39</td>
<td>0.77</td>
<td>1.82</td>
<td><strong>0.08</strong></td>
</tr>
</tbody>
</table>

As shown above, the multivariate regression including intrinsic regulation did not show a significant interaction result. As a result, this analysis was not further interpreted or investigated. The multivariate regression including integrated regulation yielded a trend-level interaction effect of group by integrated regulation on student WPS scores. This trend-level finding warranted follow-up analyses using the Multiple Linear Regression two-way interaction tool (Preacher et al., 2006). Graphic representation of the simple slopes calculated to depict this interaction effect is shown in Figure 4.3 below.
Figure 4.3

*Plot illustrating the interaction of group status and integrated regulation on student WPS scores*

Of note, both of the simple slopes calculated for this follow-up analysis were significant (simple slope for TCLP group: t-score = 1.72, p-value = 0.00; simple slope for ILP group: t-score = 3.11, p-value = 0.00). This suggests the presence of a statistically significant and meaningful interaction effect of group by integrated motivation on student WPS scores, and points to the importance of running follow-up analyses with trend-level results. This figure specifically shows that for the ILP group, the relationship between integrated motivation and student WPS scores is significantly more positive and stronger compared to the relationship between these variables in the TCLP group.

**Summary**
Quantitative data was compiled from the current study. No outliers were present in the dataset and none of the demographic variables investigated (gender, age, grade, and race) were significantly correlated with any of the outcome variables (learning style, student motivation type, and student musical engagement variables). Results of preliminary power analyses suggested that the current sample size was not sufficient to detect meaningful differences between the ILP group and the TCLP group on the MSDS subscales, the WPS, or student-reported actual engagement in music making activities outside the classroom. Due to this insufficient power, research questions one, two, and four were not investigated.

Power was sufficient to investigate research questions related to student desire to engage in music making activities outside the classroom (research questions three and five). The t-test that was run to investigate research question three was significant and asserted that more students participating in the ILP group endorsed a desire to engage in music-making activities outside of school compared to students participating in the TCLP group. In regard to research question 5, two of the four separate multivariate regressions that were run yielded significant interaction effects. Both interaction effects were in the same direction: at low levels of intrinsic or integrated regulation, group status significantly impacted student-reported desire to engage in music making activities outside the classroom, with significantly more ILP students reporting this desire compared to students in the TCLP group. At high levels of intrinsic or integrated regulation, the type of learning practice did not impact student-reported desire to engage in music making outside the classroom; all high-motivation students reported a strong desire toward participating in music making activities outside of school.
For research question six, power was only sufficient to meaningfully predict student-reported actual engagement in music making activities outside the classroom for two of the four proposed analyses: the multivariate regression including intrinsic regulation and the multivariate regression including integrated regulation. Neither multivariate regression showed a significant interaction result. For research question seven, power was again only sufficient to meaningfully predict student WPS scores for the multivariate regression including intrinsic regulation and the multivariate regression including integrated regulation. The multivariate regression including integrated regulation yielded a trend-level interaction effect. Follow-up analyses of this trend-level effect yielded statistically significant simple slopes for both the ILP group and the TCLP group, suggesting the presence of a statistically significant and meaningful interaction effect. Specifically, for the ILP group, the relationship between integrated motivation and student WPS scores was significantly more positive and stronger compared to the relationship between these variables in the TCLP group.
Chapter 5
Discussion

The purpose of this study was to further understand the link between specific learning practices and high school student motivation to engage in music making, as well as how these two constructs influence actual student engagement in music making activities. I compared the types and levels of motivation and music engagement across two groups of high school students: (a) students exclusively enrolled in a curricular music ensemble that primarily uses traditional, teacher-centered learning practices, and (b) students enrolled in an extra-curricular music ensemble that strongly incorporates informal learning practices into the ensemble experience. In this chapter, I will first discuss the results from Chapter 4, including implications for the music education profession and how the results compare to previously published literature, as reviewed in Chapter 2. I will only discuss findings from those research questions in which sufficient power for meaningful analysis and interpretation was obtained. In addition, limitations of the current study and suggestions for future research will be discussed.

Discussion of Research Question 3

Does the percentage of students who report a desire to be involved in music making activities outside the classroom differ between groups (ILP vs. TCLP)? The results of the t-test that was run to investigate this question were significant, and showed that more students participating in the ILP group endorsed a desire to engage in music making activities outside of school compared to students participating in the TCLP group (100% vs. 63%; t = -3.00; p = 0.005). Significant multivariate analyses that were run to investigate research question 5 also confirmed this finding: the two significant
multivariate regressions predicting student desire to engage in music making activities outside of the classroom both showed a main effect of group, again indicating that more students participating in the ILP group endorsed a desire to engage in music making activities outside the classroom compared to the TCLP group. This finding across analyses suggests the presence of a strong relationship between exposure to informal learning practices and significantly increased likelihood of a desire to engage in music making activities outside the classroom. As such, results from the current study add to the growing literature on the positive student-related benefits to incorporating informal learning practices into music education. Past research has shown that including informal learning practices into traditional secondary music education is associated with increased student confidence, practicing frequency, and school ensemble engagement (Bersh, 2011), as well as increased student group cooperation, peer-directed learning, autonomy, leadership, and personal musical identity (Abrahams et al., 2011; Allsup, 2003; Lebler, 2008). The difference between ILP and TCLP groups on student desire to engage in music making outside of classroom found in the current study adds to this research base, and does so from a quantitative framework of statistical significance.

The significant relationship between informal learning practices and a desire to engage in music making outside the classroom found in the current study may have meaningful implications for fostering a desire for life-long music making in secondary music education students. If students can cultivate an interest in music making outside the classroom while they are still actively involved in their curricular music ensembles, these students may also be more likely to pursue musical experiences following their exit from curricular music instruction. The incorporation of informal learning practices into the
secondary music education environment appears to be one avenue by which music educators can nurture this desire. One recent research study appears to support the connection between informal learning practices and life-long participation in music making activities. Researchers interviewed student alumni of a high school rock orchestra, the same rock orchestra that was used to recruit ILP students in the current study. Results showed that over 70% of alumni were still actively engaged in music performance, either professionally (21%) or non-professionally (50%; Koops, Hankins, Scalise, & Schatt, 2014). As music educators prepare students to become life-long music makers, it seems important to consider how the curricular music environment could include some elements of informal learning that will encourage students to continue in music once they leave the classroom.

Discussion of Research Question 5

Across groups, is there a unique combination of music instruction practice (informal learning practices versus teacher-centered learning practices) and student motivation type (intrinsic, integrated, introjected, or extrinsic motivation) that is more strongly related to student-reported desire to engage in music making outside of a school setting?

In both significant multivariate analyses predicting student-reported desire to engage in music-making activities outside a school setting, there was a significant positive main effect of group on student-reported desire to engage in music-making activities, as previously reviewed in the discussion of research question 3. Across both analyses, there was also a significant positive main effect of student motivation type: the higher the student’s level of intrinsic or integrated regulation, the more likely the student
was to report a desire to engage in music-making activities outside the classroom. These findings are in line with previous literature using the Music Self-Determination Scale: higher student-reported intrinsic motivation in a college sample was positively associated with student-reported desire to learn (MacIntyre & Potter, 2014). The main effect findings from the current study are also resonant with the broader literature on self-determination theory and music education. High student-reported intrinsic motivation has been associated with a number of other positive outcomes, including increased student self-competence (MacIntyre & Potter, 2014), effort in performance and practice (Comeau et al., 2014; Schatt, 2013; Schmidt, 2005), creativity and musical technicality during student performance (Eisenberg & Thompson, 2003), and positive opinion of life-long music making (Legutki, 2010). The current study adds to this trend of findings, and suggests that highly motivated students have a strong desire to continue participating in music making outside the classroom.

Additionally, in both the multivariate analysis that included intrinsic motivation and the multivariate analysis that included integrated regulation, there was a significant interaction effect for group status and student motivation type on student reported desire to engage in music making. Both of these effects were in the same direction: at low levels of intrinsic or integrated regulation, group status significantly impacted student-reported desire to engage in music-making activities outside the classroom, with significantly more ILP students reporting this desire compared to students in the TCLP group. In contrast, at high levels of intrinsic or integrated regulation, the type of learning practice did not impact student-reported desire to engage in music-making, as all students with
high intrinsic or integrated regulation showed a strong desire to engage in music-making outside the school setting.

These important and significant interaction effects assert that for students who demonstrate low levels of intrinsic motivation, the types of learning practices that music educators choose to use in the classroom have a strong and meaningful impact on fostering student desire for music-making outside the classroom. Specifically, this study suggests that, compared to teacher-centered learning practices, informal learning practices foster a significantly higher likelihood of endorsing a desire to engage in music making outside the classroom for low-motivation students. In other words, students who report low levels of intrinsic motivation can still develop a strong desire to engage in music making outside the classroom if they are placed in a setting that fosters this desire, and informal learning practices do just that.

It is important to clarify that these findings do not suggest that low-motivated students should solely be exposed to informal learning practices in replacement of teacher-centered learning practices. Indeed, there may be adverse effects to solely depending on informal learning practices in the secondary education setting, as this could lead to insufficient technique and learning plateaus (Bersh, 2011), especially considering the high level of musical knowledge that is often required in an environment that exclusively utilizes informal learning (McPhail, 2013). Nonetheless, there appear to be many ways to incorporate elements of informal learning practices into traditional secondary music education settings. For instance, teachers can use a few minutes of rehearsal time to listen to and analyze recording of students’ choosing. Showing interest in students’ personal music selection can increase student autonomy and ownership of the
musical experience, an important tenet of informal learning practices (Green, 2006). Additionally, past research has shown that students are more interested in engaging in traditional teacher-centered music education when student preference is taking into account (Ericsson, 2002; from Folkestad, 2006).

Teachers may also consider adding a vernacular music ensemble to their curricular or extra-curricular music programs that uses authentic instrumentation for the style of music being performed. Examples of these types of groups include: mariachi bands, steel bands, salsa bands, garage bands, electronic music ensembles, and music technology classes. These groups often lend themselves more easily to incorporating aspects of informal learning into the process, such as increased assimilation of skills and knowledge in personal, haphazard ways; increased copying of recordings by ear; and increased integration of listening, performing, improvising, and composing, with an emphasis on creativity (Green, 2006).

Two additional multivariate analyses were run predicting student-reported desire to engage in music making outside the classroom from the interaction between group status and motivation type: (a) multivariate regression that included introjected regulation, and (b) a regression that included extrinsic regulation. Neither regression showed a significant interaction result, suggesting that neither student-reported introjected regulation nor student-reported extrinsic regulation have a meaningful relationship with student desire to engage in music making outside the classroom. These null findings seem to be in line with past literature on extrinsic regulation in music settings, which suggests that the level of extrinsic regulation does not have an impact on musical achievement or engagement so long as high levels of intrinsic motivation are present (Comeau et al.,...
In the current sample across both learning style groups, the mean self-reported intrinsic regulation score (21.52) and integrated regulation score (19.85) were much higher than the mean self-reported introjected regulation score (10.59) and extrinsic regulation score (9.81). As music education researchers have previously suggested that extrinsic motivation may not be meaningful in the context of high intrinsic motivation, the high levels of student-reported intrinsic and integrated regulation in the current sample relative to the levels of student-reported introjected and extrinsic regulation support the trend in the current study for significant results in analyses involving intrinsic motivation and insignificant results for analyses involving extrinsic motivation.

These null findings have meaningful implications for the field of music education. The fact that extrinsically-oriented motivation styles (introjected and extrinsic regulation) were not significantly related to student desire to engage in music making outside the classroom suggests that music educators should not rely solely on extrinsic motivators if one of their goals is to maximally engage students in music making beyond the classroom. Extrinsic motivators in the music education environment can include required participation in pep bands, required individual practice of one’s instrument, scale tests, and ultimately student grades. These elements of secondary music education are necessary for a number of reasons. However, it is important for the music educator to remember that these motivators do not appear to have a relationship with or foster a desire to engage in music making outside the classroom among the participants in this study. In other words, external motivators are often necessary in the classroom but may
Discussion of Research Question 6

Across groups, is there a unique combination of music instruction practice and student motivation type that is more strongly related to student-reported actual engagement in music making activities outside of a school setting?

Only two multivariate analyses yielded sufficient power to meaningfully predict student-reported actual engagement in music making activities outside the school setting: (a) the multivariate regression including intrinsic regulation, and (b) the multivariate regression including integrated regulation. Neither of these regressions showed a significant interaction result, suggesting that neither learning practice (informal versus teacher-centered) nor motivation type (student-reported intrinsic or integrated regulation) have a meaningful relationship with actual student engagement in music making activities outside the classroom.

Given that there were significant relationships between music teaching practice, student motivation type, and student desire to engage in music making outside the classroom in the current study (as outlined in the discussion of research question 5), it seems odd that at first glance that there would not be meaningful relationships between music teaching practice, student motivation type, and actual student engagement in music-making activities. One possible explanation for this null finding may be that the survey instrument itself was not been clear in asking students about their actual engagement in music making activities. The survey question asked students to circle “yes” or “no” in response to the following statement: “I currently sing or play in a music group
(or jam by myself) outside the classroom.” If students circled yes they were asked to describe the musical experiences in which they were engaged. Qualitative review of students’ descriptions of their activities outside the classroom suggested some inconsistency in how students answered this yes/no question. For example, some students circled “yes” to engaging in music making activities outside the classroom, but in their description of these activities, only listed activities that were directly related to curricular ensembles, such as involvement in pep band or jazz band.

Past studies have shown that both music teaching practice and student motivation type directly impact student musical engagement. Multiple studies have found that increased student-reported intrinsic motivation toward music making is associated with increased student effort in performance and practice (Comeau et al., 2014; Schatt, 2013; Schmidt, 2005), as well as increased creativity and musical technicality during student performance (Eisenberg & Thompson, 2003). Additionally, a case study of a young clarinetist showed that the student increased their use of more advanced practicing strategies when practicing self-selected repertoire compared to instructor-selected repertoire (Renwick & McPherson, 2002); choosing one’s own music is a central component of informal learning practices (Green, 2006). Consequently, there is a strong research base for suggesting that music teaching practice, student motivation, and student musical engagement are meaningfully linked. In future studies related to understanding the link between music teaching style, student motivation, and actual engagement in music making activities outside the classroom, it may be more useful to provide students with a clearer understanding of what the researcher means by “outside the classroom.” For example, the researcher could have students denote on a checklist (generated by the
researcher) the types of ensembles or musical experiences in which they are engaging that fall outside of their curricular music commitments.

It is also possible that the current null findings accurately reflect the lack of a relationship between music teaching practice, student motivation type, and actual student engagement in music making. From this framework, another potential explanation for the null findings could be that students who are actively involved in curricular music ensembles find their participation in their curricular ensembles to be satisfying and motivating. As such, students in the current study may not feel the need to seek out music making activities beyond their curricular ensembles. It may be that the connections between teaching practice, student motivation, and actual engagement in music-making activities outside the classroom are not apparent or statistically significant until after students have matriculated from their curricular music education environments.

**Discussion of Research Question 7**

*Across groups, is there a unique combination of music instruction practice and student motivation type that is more strongly related to student-reported willingness to play music in front of others, as measured by the WPS (MacIntyre & Potter, 2014)?*

Only two multivariate analyses yielded sufficient power to meaningfully predict student WPS scores: (a) the multivariate regression including intrinsic regulation, and (b) the multivariate regression including integrated regulation. Only one of these regressions showed a meaningful interaction result (group by integrated regulation predicted student WPS scores), and only at trend level. However, follow-up analyses using the Multiple Linear Regression two-way interaction tool (Preacher et al., 2006) showed that the simple slopes calculated for both the ILP group and the TCLP group were significant. This
suggests the presence of a statistically significant and meaningful interaction effect and points to the importance of running more specific follow-up analyses for trend-level results. These follow-up analyses showed that for the ILP group, the relationship between integrated motivation and student WPS scores is significantly more positive and stronger compared to the relationship between these variables in the TCLP group.

To effectively interpret this significant finding, it is helpful to return to a definition of integrated motivation: the extent to which an individual’s motivation arises from personal values and gaining a sense of meaning from engaging in the activity (Deci & Ryan, 2008). With this definition to anchor the interpretation of this finding, the results suggest that for students who report high integrated regulation (i.e., a high sense of personal meaning from music making activities), participation in the ILP group causes them to be even more comfortable and interested in performing musically across settings compared to students who report similar levels of integrated motivation in the TCLP group. This interpretation is best understood when considering that a central tenet of informal learning practices is having personal choice and making a personal connection to the music-making experience (Green, 2006). From this framework, the stronger focus on personal choice and meaning inherent in exposure to and participation in informal learning practices may connect more strongly with students who report high integrated regulation, which may subsequently lead to an increased willingness to perform in students in the ILP group.

Conversely, for students with low integrated regulation (i.e., students who do not endorse a sense of personal meaning from music making activities), it appears that participation in the ILP group is related to these students being even less comfortable and
less interested in performing musically compared to students with low integrated regulation in the TCLP group. In other words, for students who report low integrated regulation, traditional teacher-centered learning practices appear to foster increased willingness to perform relative to informal learning practices. It may be that the low-integrated motivation students who are participating in the ILP group perceive that informal learning practices rely heavily on fostering a personal connection to the music (Green, 2006), and subsequently to musical performance. Because these students do not feel a personal connection to the music making process (as evidenced by their low self-reported integrated regulation), they are even less interested in performing compared to low-integrated regulation students exposed solely to traditional teacher-centered learning practices. Therefore, these low-integrated motivation students may not benefit from an ILP-based group in regard to fostering an increased willingness to perform.

Teacher-centered learning practices, which do not rely as heavily on students’ personal connection to the music and instead place more emphasis on the conductor’s interpretation of the ensemble repertoire, may be a better fit for students who do not report a strong sense of personal meaning related to music making activities. This better fit between a student’s motivation type and the classroom’s teaching style may subsequently lead to increased student willingness to perform. However, as the current study represents some of the only research that exists on the relationships between teaching practice, student motivation, and student willingness to perform, more research is needed before measures from the current study are directly applied and utilized in the actual practice of music education.

Limitations of the Current Study
Several limitations to the current study are worth noting. Most obvious, the current study would be strengthened by a larger sample size. Power analyses through G*Power (Faul et al., 2009) assert that a sample of 43 participants allowed the current statistical analyses to detect only large effect sizes, assuming two tails, an alpha of 0.05, and power at 0.80. Due to power issues related to sample size in the current study, I was not able to directly investigate the relationship between teaching practice (informal versus teacher-centered) and student-reported motivation type (intrinsic, integrated, introjected, and extrinsic regulation), as outlined in research question one. Previous literature has shown that in a sample of elementary school children working with music software, student-led learners reported significantly less extrinsic motivation than instructor-led learning (Tseng & Chen, 2010), supporting the hypothesis of a statistically significant link between teaching practice and student motivation. It may be that teaching practice and student motivation have a statistically meaningful relationship, but that the effect size of this relationship in the current sample was simply not large enough to be detected.

A larger sample size would allow for the detection of smaller effects, and may also allow for increased understanding of the relationship between teaching practice, student motivation type, and student musical engagement. It is important to note that from a logistical perspective, a larger sample size would be challenging to generate due to the reality that so few secondary music education programs have ensembles that primarily utilize informal learning practices. One possible option to overcome this challenge would be to conduct a multi-site study and combine students from programs across the nation that are actively incorporating informal learning practices into their
curricular ensembles. Additionally, one could use students involved in extracurricular programs, such as School of Rock (a company that hires professional musicians to teach vernacular music to children and adolescents via private lessons and ensembles), to generate a group of students exposed to informal learning practices.

Another obvious limitation is that all students in the current study were recruited from one school in one community of Northeast Ohio. Consequently, significant findings from the current study may not be generalizable to students in other parts of the country. In a similar vein, the current study only investigated the interaction between teaching style, student motivation, and student musical engagement in instrumental music groups. From this perspective, it would be unwise to generalize significant findings from the current study to vocal groups, or even to elementary or middle school instrumental ensembles.

The current study exclusively used self-report student surveys to gather relevant data related to student motivation and student musical engagement. Written self-report measures, while informative, are subject to biases on the part of the individual reporting the information. The study of the relationships between teaching style, student motivation type, and student musical engagement would be strengthened through the use of interviews. Interviewing students about how they perceive the relationship between their own motivation toward music making and their music making activities outside of the classroom would allow us to capture qualitative data. An analysis of this kind of qualitative data may lead to a more complex understanding of how students’ specific motivation relates to both their experience of various teaching styles used in the classroom, as well as their experiences related to engaging in music outside the classroom.
The focus of the current study was on the interaction between music teaching practice, student motivation to engage in music making, and student musical engagement in the present time. This study does not provide information on the time sequence in which these variables relate to one another: are students who report a desire to engage in music making activities outside the classroom more attracted to ensembles that use informal learning practices prior to joining these ensembles, or does exposure to informal learning practices lead to increased student desire to engage in music making activities outside of school? In order to truly determine the directionality of these types of relationships, prospective and longitudinal studies are needed. Again, this line of research may require the development of more secondary education programs that are incorporating ensembles based on informal learning practices into their curricular or extra-curricular offerings.

**Conclusions and Future Directions**

Despite limitations, the current results underscore the importance of a nuanced understanding of the interaction between music teaching practice, student motivation type, and student musical engagement in the context of secondary music education. The current study found several benefits to student participation in groups that emphasize informal learning, including an increased desire to engage in music making outside the classroom relative to students enrolled exclusively in groups emphasizing teacher-centered learning practices. In the current study, exposure to informal learning practices (as opposed to teacher-centered learning practices) was particularly beneficial in fostering a desire to engage in music making activities for students who reported low levels of intrinsic or integrated regulation. Additionally, participation in an ensemble that heavily
emphasized informal learning practices was found to significantly increase student willingness to perform musically, so long as the student reported high levels of integrated motivation. In contrast, students who participated in the ILP group and reported low levels of integrated motivation were much less willing to perform musically, compared to both high-integrated motivation students enrolled in the ILP group and low-integrated motivation students enrolled in the TCLP group.

Findings from the current study suggest a number of avenues for future research. First, and perhaps most obvious, is the need to establish a research-supported “best practices” for how to effectively integrate informal learning practices with teacher-centered learning practices in music education. Prominent researcher Lucy Green recently published a handbook for music educators that outlines the logistics and practicalities of integrating informal learning practices into a traditional music curricular framework (Green, 2014). This handbook offers practical teaching tips for incorporating informal learning practices into both general music settings and instrumental ensembles. The handbook is also connected to a companion website, www.musicalfutures.org, which provides training and resources for music educators who are interested in informal learning. Green’s 2014 handbook and the accompanying website are based on Green’s extensive line of qualitative research related to informal learning practices (see Green, 2006). However, the actual teaching strategies designed to support informal learning practices outlined in Green’s 2014 handbook and accompanying website have not been systematically or statistically compared to traditional teacher-centered learning practices. Methodical research of this nature would add substantial validity to the current trend toward increased integration of informal learning into traditional music classrooms.
There are many challenges to implementing informal learning practices in traditional music education programs, let alone conducting research on the implementation of these informal learning practices. First, while curricula based on informal learning practices exist (see Green, 2014), these curricula are not routinely referred to or taught in college music education courses. In fact, a focus on teaching informal learning practices is extremely rare in college courses for future music educators (Jones, 2008). Subsequently, if a music educator wants to integrate informal learning practices into their classroom, it takes a significant amount of independent effort and self-instruction on the part of the music educator.

Additionally, the majority of music education classrooms are not set up logistically for the types of ensembles that lend themselves well to informal learning practices. Traditional music education programs are often built on a large ensemble model: it is not uncommon for a music educator to have a student to teacher ratio of around 70 students to one director for an entire class period. In this setting, there is often neither the staff nor the space needed to successfully break students into smaller groups for a more authentic informal learning experience.

An important finding in the current study is the fact that not all students benefitted equally from exposure to informal learning practices. In fact, certain students appeared to benefit more strongly from their participation in teacher-centered learning practices: students who reported low integrated motivation were actually less willing to perform if they had been exposed to informal learning practices compared to students who were only exposed to teacher-centered learning practices. This finding points to the importance of moving away from a “one size fits all” music education curriculum and instead toward
creating a wider variety of music courses in which teaching style and pedagogy differ based on the needs and motivations of the individual students. Further research is needed to determine what types of student characteristics (e.g., student motivation, ability level, musical knowledge, creativity) are important to consider when determining the extent to which informal learning practices should be integrated into traditional music education curriculum settings. Along these lines, it may also be interesting and worthwhile to more directly investigate how student gender, cultural background, sexual orientation, and other demographic factors influence students’ ability to effectively engage in informal learning practices versus teacher-centered learning practices across different music education settings.

While the current study focused on the relationships between music teaching practice, student motivation type, and student-reported musical engagement, a possible extension to the current study would be whether teaching style and student motivation interact to predict observable student behavior. Do these variables impact how students practice? Is there an impact on objective technical music skills or music knowledge based on the interaction between teaching style and student motivation? Does teaching style or student motivation impact how long students stay involved in curricular music education across their academic careers? If these kinds of questions can be answered, there may be many potential benefits to music education programs, both in terms of student enrollment and student musicality. It is my hope that the current study fosters future research on the role of music teaching style and student motivation across various behavioral, cognitive, and emotional outcomes relevant to the field of music education.
Appendix A

MUSIC SELF-DETERMINATION SCALE

There are a variety of reasons why people play music regularly. Please indicate how true each of these statements are for why you play music regularly. The scale is:

1  2  3  4  5  6  7
not at all  somewhat  true
true  very true

I try to engage in playing music on a regular basis:

___  1. Because I would feel bad about myself if I did not.
___  2. Because others would be angry at me if I did not.
___  3. Because I enjoy playing music.
___  4. Because I would feel like a failure if I did not.
___  5. Because I feel like it's the best way to help myself.
___  6. Because people would think I'm a bad musician if I did not.
___  7. Because I feel like I have no choice about playing music; others make me do it.
___  8. Because it is a challenge to accomplish my musical goals.
___  9. Because I believe playing music helps me feel better.
___ 10. Because it's fun.
___ 11. Because I worry that I would get in trouble with others if I did not.
___ 12. Because it feels important to me personally to accomplish this goal.
___ 13. Because I feel guilty if I do not practice music regularly.
___ 14. Because I want others to acknowledge that I am doing what I have been told I should do.
___ 15. Because it is interesting to see my own improvement.
___ 16. Because improving my playing is an important value for me.
Appendix B

PERMISSION TO USE MSDS AND WPS FROM ORIGINAL AUTHOR

On Mar 20, 2014, at 5:05 PM, "David Scalise" <dcs85@case.edu> wrote:

Dr. MacIntyre,

I am a music education graduate student at Case Western Reserve University currently developing a proposal for my thesis. I am considering conducting a study that examines the effects of informal learning processes on students’ motivation. Specifically, I will be surveying members of a unique high school rock orchestra called “The __________ Project”. The group performs rock and pop music as well as classical music with a rock twist. Although there are directors of the ensemble, the classroom setting is very informal and students are encouraged to communicate, problem solve and critique the music during rehearsals. The members arrange and compose most of the music performed.

I have been reading your excellent article, Music motivation and the effect of writing music: A comparison of pianists and guitarists, and I am particularly interested in two of the measures you adapted for your study. Would you be willing to share with me your modified versions of the following 2 measures so I can use them in my study?

1) Williams and Deci’s (1996) Self-Determination Scale

2) McCroskey and Baer’s (1985) 9-item Willingness to Communicate scale

Thank you for your time!

Best,

David Scalise
On April 11, 2014 at 7:43:28 AM, Peter MacIntyre (peter_macintyre@cbu.ca) wrote:

Hello David,

Sorry for the delay. Attached is the questionnaire that you requested. It likely is self-explanatory but if you have any questions, please let me know.

Good luck with your research, and please let us know how it turns out,

Peter

Peter D. MacIntyre

Professor of Psychology

Cape Breton University

1250 Grand Lake Road

Sydney, NS Canada B1P 6L2
Appendix C

STUDENT SURVEY

1. Gender (please circle one): Male  Female

2. Age in years _____  Grade _____.

3. How would you describe your ethnicity (some examples: Caucasian, African American, Asian, Hispanic, Biracial)? ____________________________________________.

4. List all instrument(s) played in and out of school: ____________________________________________.

5. Your Primary Instrument, the one you play most often: _________________.

6. Your ensemble group: (please circle one)
   The ________ Project    High School Band Program

7. The instrument you play in the group you circled above: _______________________.

8. Please list other curricular ensembles you play in (not including the ensemble you circled above):
   ________________________________________

For the following statements, circle ‘Yes’ if you believe the statement to be true about you, and ‘No’ if the statement is false:

I currently sing or play in a music group (or jam by myself) outside the classroom.

   Yes    No

If you circled yes, please describe the musical experiences you engage in outside the classroom:

________________________________________________________________________

I wish I was playing or singing in a music group (or jamming by myself) outside the classroom.

   Yes    No

If you circled yes, please describe the musical experience you would like to engage in:

________________________________________________________________________
Appendix D

WILLINGNESS TO PLAY SCALE

Instructions: This questionnaire is composed of 9 statements concerning your feelings about playing music with other people. Please indicate in the space provided the percentage of time you feel like playing in each situation. For example, if you never want to play if there is a stranger around, write a number such as 0 or 10; if you would be willing to play in front of strangers all the time, write a high number, perhaps 90 or 100; if you might feel like playing about half the time write 40, 50, 60, whatever seems most appropriate for you. There are no right or wrong answers. It is best to work quickly and record your first impressions.

0-------------------------------------------------------------------------------------------------100
I would NEVER feel like playing I would ALWAYS feel like playing

_____ 1) When playing informally in a small group of acquaintances
_____ 2) When playing informally for a small group of strangers
_____ 3) When playing formally for a large group of friends
_____ 4) When playing formally for a large group of strangers
_____ 5) When playing with a friend
_____ 6) When playing with an acquaintance
_____ 7) When playing formally in a large group of acquaintances
_____ 8) When playing with a stranger
_____ 9) When playing informally for a small group of friends
Appendix E

LETTER OF INTRODUCTION

Dear [Band Director or Orchestra Director]:

I am writing to ask for your assistance in examining the impact of involvement in curricular and extra-curricular music ensembles on high school students’ motivation to engage in music making activities. The best way to learn about student motivation is to ask the students themselves. I am hoping that your school music program will help in this research project, as you have unique opportunities for music engagement for your students. This research project is my master’s thesis.

To take part in this study, it is essential that you are a music educator who instructs band students in ninth through twelfth grade during the school day as part of your regular teaching responsibilities.

If you elect to participate, your students will be asked to complete a short two-sided survey regarding their self-perceived motivation and willingness to engage in music making activities. A copy of the survey is enclosed for your review. It is estimated that this survey will take about 10 minutes to complete. Any student under the age of 18 will require both guardian and student signatures on permission forms. Copies of these forms are also enclosed. As a token of my appreciation to the students, all students who return their survey and permission forms will be entered into a random drawing for one of five $20 iTunes gift cards.

If you have any questions about this survey or the research process, please do not hesitate to contact me at david.scalise@case.edu (206-331-6177). You may also contact my thesis advisor, Dr. Lisa Koops, Associate Professor of Music Education at Case Western Reserve University, at lisa.koops@case.edu (216-368-2430). This study has been reviewed and approved by the Case Western Reserve University Institutional Review Board. If you have any questions regarding your students’ rights as participants in this study, you may contact them by telephone at (216) 368-6925.

I hope that you will consider this request and look forward to receiving your response regarding study participation. Please fill out the reverse side of this paper and using the enclosed self-addressed, stamped envelope. Your prompt attention to this letter is encouraged. Please respond by [DATE].

Sincerely,

David C. Scalise
Masters Candidate in Music Education
Case Western Reserve University
CONSENT TO PARTICIPATE

I have read the above information. I understand that my participation is voluntary. By signing below, I agree to allow my students the opportunity to participate in this research study.

____________________________________
School District Name

____________________________________
Music Director’s Printed Name

____________________________________
Date: _________________________
Music Director’s Signature

(_____) ________ – ______________
Contact Phone Number (Day) Email Address

Preferred Method of Contact:
☒ Phone
☒ Email

Total Number of Students in Ninth through Twelfth Grade Bands: ________________

___________________________________
School Building Administrator’s Signature

DECLINE TO PARTICIPATE

I have read the above information. I understand that my participation is voluntary. By signing below, I decline to allow my students the opportunity to participate in this research study. I understand that I will receive no further communication from the researcher regarding this study.

____________________________________
School District Name

____________________________________
Date: _________________________
Music Director’s Signature
Appendix F

SCRIPT FOR SURVEY ADMINISTRATION

(To be read aloud by the ensemble director):

At this time, you all have the opportunity to participate in a survey about motivation to engage in music making activities from a researcher at Case Western Reserve University. I will be passing out a parent permission form that you can take home with you. Please have your parent read through the permission form carefully. If you would like to participate, please have your parent sign this permission form. When you return the form to me, I will give you a survey and student permission form to complete. Please read through the pages carefully. The survey should take about 10 minutes to complete.

You should not put your name on the survey. It is important that it be completely anonymous. Neither the researcher nor I will know if a survey belongs to a particular student. If you decide you don’t want to complete the survey, it will not affect your band grade or your relationship with me, with the school district, or with Case Western Reserve University.

If you would like to participate in the research, have your parent permission form signed by our next rehearsal. If you return the parent permission form, completed survey, and student permission form with both your and your guardian’s signatures, you will be entered in a drawing to receive one of five $20 iTunes gift cards. This research is important and will help answer questions that could help music educators and students. The researcher would like me to thank you for your time and consideration.
Appendix G

GUARDIAN INFORMED CONSENT DOCUMENT

PROJECT TITLE: THE EFFECTS OF LEARNING PRACTICES ON MOTIVATION AND ENGAGEMENT AMONG HIGH SCHOOL INSTRUMENTALISTS

Background Information
You are being asked to allow your adolescent to participate in a research study about the influence of music teaching style on high school students’ motivation to engage in music making activities. Researchers at Case Western Reserve University are conducting this study. Please read this form and ask any questions you may have before agreeing to participate.

Procedures
If your adolescent chooses to participate in this study, I ask you and your adolescent to do the following:

• Review all information in this form and sign as indicated.
• Have your adolescent review and sign the attached assent form and complete three short questionnaires about their music motivation and participation. These questionnaires should take about 10 minutes for your adolescent to complete.
• Return the guardian consent form, student assent form, and completed questionnaires to your adolescent’s school, where it will be placed in a return envelope in the adolescent’s music classroom.

Risks and Benefits to Study Participation
There are no foreseeable risks or direct benefits to you or your adolescent for study participation.

However, by exploring how specific music-teaching practices impact student motivation, it is the hope that this study will facilitate a better understanding of what instructional practices and activities resonate with high school students and promote life-long engagement in music making activities. All students who complete the survey will be entered into a drawing for one of five $20.00 iTunes gift cards.

Confidentiality
The records of this research will be kept private. In any sort of manuscript that may be published regarding this research, no information will be shared that would make it possible to identify a participant. Research surveys, consent forms, and assent forms will be kept in a locked file, and access to these files will be restricted to the researchers, the Case Western Reserve University Institutional Review Board (CWRU IRB – this group is responsible for protecting the rights of human participants), and regulatory agencies.

Contacts and Questions
The researcher conducting this study is David Scalise, advised on this project by Dr. Lisa Koops. If you have any questions, concerns, or complaints about the study, you may
contact either of these researchers at david.scalise@case.edu (206-331-6177) or lisa.koops@case.edu (216-368-2430).

If the researcher is not available, or if you would prefer to talk with someone other than the researcher regarding: (1) study-related questions, concerns, or complaints; (2) your rights as a research participant; (3) injuries related to your research participation; or (4) other human subjects issues, do not hesitate to contact the CWRU IRB at (216) 368-6925 or send a letter to:

Case Western Reserve University
Institutional Review Board
10900 Euclid Avenue
Cleveland, OH 44016-7230

Please make a copy of this form for your records, if you wish.

**Statement of Consent**
I have read the above information. I have received answers to the questions I have asked. I consent for my adolescent to participate in this research. I am at least 18 years of age.

Guardian Name: ________________________________

Signature of Guardian: __________________________ Date: ______________

Signature of Researcher Obtaining Consent: ______________ Date: ___________
Appendix H

INFORMED ASSENT DOCUMENT

PROJECT TITLE: THE EFFECTS OF LEARNING PRACTICES ON MOTIVATION AND ENGAGEMENT AMONG HIGH SCHOOL INSTRUMENTALISTS

INVESTIGATOR: Mr. David Scalise, MA Candidate, Case Western Reserve University

My name is Mr. David Scalise. I am a graduate student working on a master’s in Music Education at Case Western Reserve University and have taught high school band for seven years. As part of my graduate work, I am interested in better understanding students’ motivation to engage in music making activities. To help me learn more about this, I am asking high school students at your school to complete a short survey form. I will look at responses from all students who complete and return this survey, and I hope to use this information to develop suggestions for music teachers on how to increase the motivation of their students.

If you would like to take part in this project, you will be asked to complete the attached survey. It will likely take about 10 minutes to complete the survey.

Your legal guardian will also need to give permission for you to participate in this research study. However, even if your guardian consents to your participation, you can decide you are not interested. You may quit this study at any time by not filling out the questionnaire. Your decision to participate will not impact your grade or your relationship with your teacher in any way. There are no known risks involved in this study and no direct benefit to you for participating. However, I am hoping that what I learn will help teachers better motivate their students to engage in music. As my way of saying thank you for participating, you will be entered into a drawing for 1 of 5 $20 iTunes gift cards when you complete the survey and return it to your ensemble director during your next class.

When this study is completed, I will write a manuscript about what was learned. This manuscript will not include your name, your guardian’s name, or your school’s name.

If you decide you are not interested in participating in the study, that is fine. If you decide you would be willing to participate, please print and sign your name below and fill in today’s date. Thank you for considering this opportunity!

I, ___________________________ (print name here), want to participate in this research.

Sign name here: ___________________________ Date: ___________________________
References


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Green, L. (2006). Popular music education in and for itself, and for “other” music:


Green, L. (2014). Hear, listen, play! How to free your students’ aural, improvisation, and performance skills.
New York, NY: Oxford University Press.


