

Constructivism in the Band Room:
Facilitating High School Band Students' Playing by Ear
through Informal, Student-led Practices

by
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ABSTRACT

This study investigated high school band students' processes of learning as well as their responses and reactions to student-led aural-based learning projects. Previous research has focused on various aspects of informal learning and student-centered learning—the frameworks upon which this study is based—but none have focused on inclusion of informal learning methods into a secondary large ensemble classroom setting with an emphasis on playing by ear.

Participants in this study were 20 students divided into four small groups in a 45-member high school band. The study took place during the regularly scheduled band class during one full class period for eight weeks, culminating in small group performances. Data were collected throughout the study via observation and audio- or video-recording of weekly group rehearsal, participant interviews, teacher interviews, and collection of student artifacts. Data were analyzed by creating a case study of each of the four groups to determine their working processes.

Cross-case analysis revealed themes common to the participant groups in these categories: navigation of the learning process, playing by ear, and student attitudes and perceptions of benefits and drawbacks of the project. Discussion of navigation of the learning process includes group members' methods of problem solving within a constructivist classroom environment. These methods included problem finding, strategizing, and responding, peer assessment and feedback, and teacher scaffolding; I also discuss how group dynamics played a major role in student's learning processes. While learning to play by ear, musical elements students addressed included pitch, division of parts, form, key and modality, intonation, instrumentation, dynamics, tempo,

rhythm, improvisation, and range. Students' attitudes included enjoyment of most aspects of the project, and dislike or frustration with a few aspects. Benefits students perceived from participation in the project included increased ability to play by ear and increased confidence. Recommendations for music teachers and music teacher educators as well as suggestions for future research are provided.

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Chapter 1 Introduction

Every afternoon when I walk in to the band room to get ready for marching band rehearsal, I hear the same song played by the same student over and over again. Why does he choose to torture me with his rendition of the *Top Gun* theme song played with a bad trumpet sound? He needs to open up his tone. Why can't he get that note? And why does he continue to play that rhythm wrong? It's not even a difficult melody! "Come on, Michael, stop messing around and get in formation!"

These were some of the thoughts that I had several years ago during my tenure as a public school band teacher. Now, looking back, I kick myself for not asking Michael more questions: "Why did you choose to learn that song? Is *Top Gun* your favorite movie or do you just like how the song sounds? Do you play with other people outside of band? Have you ever thought about teaching your song to other band members? Have you ever thought about arranging it for the band to play or for a small group? How did you go about learning that song?"

Though not one of the top trumpet players in the section, even during his senior year, Michael was a dedicated member of the Montgomery High School Band. He never auditioned for All-State Band (his chances of making the cut would be slim to none), never applied for section leader, never "made it" to first trumpet in the marching or symphonic band. So why, exactly, was he even in band? I never bothered to ask him that question or any others.

Since I have left Montgomery High School, my own thoughts and experiences have "changed my tune." Now, instead of asking, "Why are you playing that?" I would ask him, "How did you learn that?" I would be more interested in learning about the

processes he used to figure out the tune and why he chose that tune, rather than how well he played it. Now, I am more interested to know whether band students can play music other than what is notated for them on the page rather than whether they will be able to play a particular large ensemble work well enough to receive a superior rating at district festival. Now, I am ready to learn what would happen if we took the notation away and challenged students to learn music through other means.

In our band rehearsals at Montgomery High School, Michael played his part and seemed to enjoy doing so. Maybe he liked the music. He had improved on his instrument and advanced to the middle of the section in the top band. But why was he not more motivated to practice and move up in the section? Was it because he was more interested in practicing the music *he* wanted to learn and not the band music? Was it because he knew that the band teachers were going to tell him what to fix and how to fix it to make the band music sound better rather than ask what he thought?

Band classes in the U.S. often operate under a teacher-centered approach (Holsberg, 2009; Mark, 1996) in which the teacher's task is to make "decisive [musical decisions] informed by extant intelligence, 'best practice' professionalism, and custom" (Allsup & Benedict, 2008, p. 157). Allsup (2002, 2003) noted that band culture often seems to emphasize the banking model of education (Freire, 1970/1993), in which students "are expected to leave their musical world behind and enter a musical culture that likely has little previous relation to what they know and like" (Allsup, 2002, p. 9) in order for the band teacher to fill their heads with musical knowledge. The stereotypical image of a traditionally run band classroom is one in which the teacher leads the rehearsal, the teacher discourages talking or discussion among students, the teacher

advises students on the necessary musical corrections needed to enhance performance quality, and the teacher makes all or most decisions about music and methods toward the aims of a superior performance. While these may be issues for any secondary large ensemble class including choir and orchestra, this dissertation is situated specifically within a band setting.

Britton (1966) noted that, in the high school band program, “the ability to perform has been treated as an end in itself, an activity for activity’s sake” (p. 27). He spoke about music “specifically manufactured for contest purposes” and questioned whether the “development of technical proficiency” on instruments was “a worthy aim in itself” (p. 27). Although he wrote these words before the 1967 Tanglewood Symposium, he seemed to foreshadow the music educators and scholars who, since the Tanglewood Symposium, have called for music education in schools that is relevant to students’ musical lives outside of school. Garofalo (1983), O’Toole (2003), and Sindberg (2012) describe methods large ensemble teachers have implemented based on comprehensive musicianship, which seeks to “enrich the performing experience with additional kinds of musical understanding” (Benner, 1972, as cited in O’Toole, 2003, p. xi). Garofalo (1983) notes that the concert band’s “rich potential for teaching about music beyond performance skills remains relatively undeveloped” (p. ii). Musical experiences associated with band that may foster independent musicianship or peer learning, such as sectional practice, individual practice, or chamber music ensembles, often occur after school or outside of band class time (Allsup, 2002, 2003; Larson, 2010). Though educators for many years have called for teaching that goes beyond skill acquisition, the

normative paradigm of the concert band rehearsal goals remains largely unchanged (Allsup & Benedict, 2008; Garofalo, 1983; Lisk, 2001; O'Toole, 2003; Sindberg, 2012).

In addition to teacher-directed instruction, traditional band rehearsals usually focus on performing composed music from the concert band/wind ensemble canon. In my experiences with high school band students and in conversations with peers who participated in high school band, many of them said they relied heavily on musical notation and seldom used listening skills as a primary means to learn music. These comments suggest they had little experience with aural learning in their large ensembles. Why does this situation exist? Is it perhaps because their formal music education never inspired them to develop their aural skills? Perhaps they never had the opportunity to do so. Is it because learning music in any way other than via traditional notation was considered less important by their teachers? Perhaps in attempts not to teach by rote, their band teachers largely avoided aural learning because they worried that students would not learn to read notation, but would instead simply memorize what they were hearing. When students are “messing around” or “fiddling around” on their instruments (Campbell, 1995; Duke, 2012) in those fringe moments of rehearsal playing songs they listen to outside of band class, what are they learning? What would happen, then, if the band classroom included opportunities for both aural learning and playing from notation? Further, what would happen if high school band students used only their aural skills and collaboration with peers to learn to play a piece of music? What can we glean from the methods they employ and how can they be incorporated into the large ensemble classroom? Few prior studies have examined aural learning in these ways. My study

sought to uncover the processes students used in a student-led environment within a high school band context to create and learn to play arrangements of popular songs by ear.

Purpose and Research Questions

I investigated high school band students' responses and reactions to student-led, aural-based learning projects using music students chose for themselves. The following questions guided this investigation:

1. How do high school band students navigate the process of aurally learning music?
2. What musical elements do students address?
3. What are students' responses and attitudes toward student-led, aural-based learning projects?
4. What benefits do students perceive from participation in student-led, aural-based learning projects?

Conceptual Framework

This study is based on principles of a constructivist approach to learning. Music educator Jackie Wiggins listed the characteristics of a constructivist learning experience:

- Learners actively engage in real-life, relevant, problem-solving experiences designed to enable them to construct and act upon their own understanding.
- Learners work with the “‘big ideas’ or primary concepts” (Brooks & Brooks, 2001) in ways that foster thinking.
- Learning experiences are holistic in nature.
- Learners have ample opportunity to interact with peers and teacher.
- Learners' own ideas are central to the teaching/learning process.
- Learners are aware of goals and of their own progress toward goals.
- Assessment of learning is embedded in and emerges from the learning experience. (2009, p. 30)

More specifically, much of Lucy Green's informal music learning (2001, 2008) falls under the umbrella of constructivism. Within an informal learning environment, many of the characteristics of a constructivist learning experience can be facilitated within an informal learning environment. Two aspects of her research have shaped my conceptual framework: 1) the facilitation of aural learning through informal music learning practices and 2) the fostering of a student-centered learning environment.

Facilitating Aural Learning through Informal Learning Practices

Folkestad (2006) makes an important distinction between “learning how to play music” and “playing music.” He states, “In the formal learning situation, the minds of both the teacher and the students are directed towards *learning how to play music* (*learning how to make music*), whereas in the informal learning practice the mind is directed towards *playing music* (*making music*)” (p. 138, emphasis his). Folkestad also noted what I now realize I witnessed with Michael: that both formal and informal music learning can occur both in and outside of schools. Perhaps students do this of their own volition, on the fringes of band class, in the in-between times—before or after class rehearsal, during breaks, or at home while listening to the radio or making music with friends. Green (2001) described her observations of similar activities in a general music classroom:

. . . all [the students' informal] rehearsal activities occurred in the interstices of the curriculum, in rooms that could only occasionally be occupied without getting “kicked out,” during breaks and lunch hours, at times when lessons were being “skived,” or after school when no one else was around. (pp. 78-79)

Green (2001) defines informal music learning as “a variety of approaches to acquiring musical skills and knowledge outside formal educational settings” (p. 16). In her first book, *How Popular Musicians Learn* (2001), Green conducted interviews with

fourteen musicians who played popular music living around London in 1998-1999. She asked them in-depth questions about their skills and knowledge, their attitudes toward musicianship and being musicians, their experiences in formal music education and as teachers, and their opinions toward including popular music in formal music education.

The popular musicians in Green's study learned skills and knowledge through musical enculturation—immersion in the everyday music and musical practices of their social contexts. Green explained that while “skills are often associated with motor control, such as the ability to play fast scales,” the term can also include “the execution of purely mental acts of interpretation, such as recognizing chord progressions by ear or reading notation ‘in the head’” (p. 21). She noted that knowledge

is connected with notions of understanding or acquaintance, such as appreciating in what ways psychedelia influenced the history of rock or “knowing a song.” . . . Similarly, a cover band musician's knowledge of a song, when put to use in music-making, is the necessary condition for motor activity: without the knowledge, the song could not be played. (p. 21)

These popular musicians also learned through purposive listening—listening with a purpose of recreating the sound one hears—and “just listening” or listening somewhat subconsciously. Notation was very much secondary to learning by listening for these musicians who read mostly in tablature, mixed, or partial notation. All of the participants had developed good aural skills; they could pick out chords and sequences just from listening. Other means for acquiring skills and knowledge included peer-directed learning and group learning, watching professionals, and talking with other musicians. They practiced mostly with their bands, when they wanted to, and they practiced songs rather than scales or technical exercises.

Green's next book, *Music, Informal Learning and the School* (2008), described a pedagogical project designed to "investigate whether it would be possible and beneficial to bring at least some aspects of informal popular music learning practices into the realms of the school classroom" (p. 9). From her previous research, Green formed five fundamental principles of informal music learning practices that she incorporated into her project:

1. Informal learning always starts with music which learners choose for themselves.
2. The main method of skill-acquisition in the informal realm involves copying recordings by ear.
3. Informal learning takes place alone and alongside friends, through self-directed learning, peer-directed learning and group learning.
4. Skills and knowledge tend to be assimilated in haphazard, idiosyncratic and holistic ways, starting with whole, real-world pieces of music.
5. Informal learning usually involves a deep integration of listening, performing, improvising and composing throughout the learning process, with an emphasis on personal creativity. (Green, 2008, pp. 9-10)

The overall pedagogy and content of Green's informal learning project within a general music classroom followed seven stages:

Stage 1: the heart of the project – dropping pupils into the deep end

Stage 2: modeling and learning with popular music

Stage 3: the deep end revisited

Stage 4: informal composing

Stage 5: modeling composing

Stages 6 and 7: informal learning with classical music. (2008, pp. 25–27)

In the first phase, Green "dropped pupils into the deep end" by asking them to "emulate as closely as possible the real-life learning practices of young, beginner popular musicians" (p. 25) with little intervention or help from the teacher. Green explained, "The

role of the teacher throughout the project was essentially to establish ground rules for behavior, set the task going at the start of each stage, then stand back and observe what students were doing” (p. 24). Recognizing that this presented the most radical challenge for project teachers, Green allowed them to act as musical models in stages that followed, but not before or during the class sessions in Stage 1. Therefore, as students worked in small groups to learn songs, the teachers assumed a responsive rather than directive role, with no teacher-set aims, fostering a self- and peer-directed collaborative environment.

This informal approach to learning music may seem largely foreign to formally educated band students unless they have had experiences with aural learning outside of class. In my experience, band students who play other instruments such as guitar or drum set tend to learn to play those instruments by ear outside of class and in a manner that is much less structured than the way they learn aurally in music classes (if they learn aurally at all). Recently researchers have studied this type of unstructured aural learning and suggest that students can learn in this way and that they enjoy this informal, unstructured method (Campbell, 1995; Davis, 2005; Green, 2001, 2008; Jaffurs, 2004).

The set-up of the current study draws from Stage 1 of Green’s study: “dropping pupils into the deep end” (p. 25), where the teacher’s role was more responsive than directive. The paradigm of expert-to-novice teaching employed in many traditional band classrooms implies a power structure that is very different than the sharing that occurs in informal learning methods of peer-teaching and -learning. Including these informal learning methods into the band classroom may allow students to communicate freely with each other and teach each other in ways that may not happen within the power dynamics that occur in a teacher-directed classroom. This understanding led to the second aspect of

the conceptual framework for this study: the fostering of a student-centered learning environment.

Student-centered Learning

Nanney (2004) describes student-centered learning as “a broad teaching approach that encompasses replacing lectures with active learning, integrating self-paced learning programs and/or cooperative group situations, ultimately holding the student responsible for his own advances in education” (p.1). Blair (2009) articulates that in a student-centered learning environment where students are “thinking and doing,” making musical decisions on their own or in student groups, they learn more effectively than when the teacher makes all musical decisions. Brown (2008) adds, “The teacher shares control of the classroom, and students are allowed to explore, experiment, and discover on their own” (p. 30). Allsup (2002) suggests that such student-centered opportunities are rare in school band classrooms:

Missing in the musical world of the typical band student are two important dimensions of artistic experience: First, the need for self-expression and culturally appropriate, meaningful music making; and secondly, the need to create a workable space or context in which players share and create their own music. Such a space, under institutional tutelage, would be necessarily student-centered. (p. 10-11)

Student-centered learning methods are closely related to Green’s informal learning practices. Though Green (2008) does not specifically mention “student-centered learning,” she addresses group activity as situated within a continuum that implies student-centered learning, from group learning on one end to peer-directed learning on the other end.

[Group] learning . . . occurs more or less unconsciously or even accidentally, simply through taking part in the collective actions of the group. . . . Although not

directly intended to foster learning experiences, “group learning” tends to lead to the gradual refinement of the musical product. (p. 120)

On the other end of this student-centered continuum is peer-directed learning, which is “a more conscious approach in which knowledge or skills are learnt through being explicitly and intentionally imparted from one or more group members to one or more others” (p. 120). I consider Green’s notions of peer-directed learning and group learning to fall within a student-centered learning model that may foster a learning environment in which informal learning takes place. Because in my study, students worked intentionally with peers toward a specific goal, I place my study closer to peer-directed learning rather than group learning. Also in my study, because the teacher had little to no input, I have chosen to use the term “student-led learning,” which includes Green’s notion of peer-directed learning within a student-centered classroom environment.

Need for the Study

Over the last several years, educators have critiqued music education (Kratus, 2007), secondary large ensembles (Williams, 2011), and more specifically the school band paradigm (Allsup & Benedict, 2008). Kratus (2007) critiqued the current system of music education, making a case that drastic changes need to occur in the curriculum. He noted that the “singing school movement in the late nineteenth century and the school band movement in the mid-twentieth century are unmistakable examples of music education fulfilling changing societal needs” (p. 42). However, because society continues to move forward, music education must also continue to change to remain culturally relevant. Kratus compared out-of-school and in-school music, noting that in-school music should not be a separate entity with little apparent relevance to out-of-school music. In-school music should include what students learn and do in everyday life and foster music-

making practices after they leave high school. Much of current in-school music is “largely based on classical, folk, and sometimes jazz traditions” and “emphasizes large-group performance, in which everyone plays or sings the same piece at the same time” (p. 45). Kratus purported that this is outdated, because with the availability of “personal ear buds and personal digital recording studios . . . a young composer or performer no longer needs bandmates to create a pop song or a symphony in the basement” (p. 45). He suggested, “music education needs to become sticky, meaning that it must become potent and irresistible. It must also connect people to music in ways that are both personally fulfilling and educationally valid” (p. 46). In order to accomplish this type of music education he suggested three things. First, musical mavens are needed to “initiate change, connectors [are needed] to transmit the change to a broader population, and salesmen (and women) [are needed] to translate the change into each school’s particular context” (p. 46). Second, education reforms that may be proposed under a variety of conditions must be tested to refine and present them in ways that will be effective for music education in a variety of situations. Third, Kratus stated that music educators must believe that change is possible, “even under unlikely circumstances” (p. 47).

Williams (2011) discussed issues concerning large ensembles as the model for music education, stating, “The large ensemble may be one of the biggest impediments to wider access to music education in public schools in the United States” (p. 51). He suggested that problems include class sizes that are too large for individual student learning; lack of student-centered learning practices; musical and creative decisions being made almost solely by the director; group evaluation, based on how well students perform, that takes precedence over individual learning; irrelevance of instruments and

musical styles taught in large ensembles; amount of time and practice needed to develop functional skills needed to play these instruments; overreliance on traditional notation; little development of skills for lifelong musical involvement; and lack of entry level classes after beginning band. He purported that two issues keep the profession from making significant strides in increasing enrollment and extending musicianship skills: “First is this belief that a secondary school music program must include traditional ensembles, and second is the belief that anything added is exactly that—an add-on” (p. 57). He suggests that if these attitudes were to change, the profession could make “real progress related to enrollment and musical participation” (p. 57), and could offer other music classes while also continuing strong large ensemble programs.

More specifically, the secondary large ensemble wind band rehearsal paradigm has come under critique as researchers have sought to find alternatives to teacher- and subject-centered approaches to teaching band. Allsup and Benedict (2008) examined the educational function of the North American wind band program from a philosophical standpoint. Although this model, grounded in a behavioristic approach to learning coupled with Ford’s efficiency model, seems to have become the normative view of band rehearsal in the U.S., they questioned whether it is the best model for student achievement.

In this article, Allsup spoke of confusing “our tradition with the traditional way our tradition is taught” (p. 158). When he was a band director in the Bronx, he admitted he was more of a trainer than a teacher at times and that his teaching methods more than likely made his students miserable: “I taught the way I was taught and certainly did not see my expertise as a problem” (p. 158). It seemed to Allsup that behaviorist methods

were ready-made for band conductors to control and predict students' outcomes by conditioning their behaviors to perform the skills needed for large groups of students to play instruments. Though training is required at some level to build skills that are needed to learn a musical instrument, Allsup said "band culture has a teaching tradition that goes beyond the normative concept of training or *tekhné* (the Greek word for craft) to what behavioral psychologists call 'conditioning'" (p. 158). This philosophy, coupled with the military ethos of school bands, continues to prevail as the normative paradigm for teaching band. Allsup suggested that band directors' issues of control and fear show up in such practices as high-stakes auditions, recitals, competition rankings, and festival ratings. He encouraged band teachers to examine their fears as music educators, because "an open and honest inquiry will lead not only to healthier learning environments and better teaching, but possible insights into the longevity—the future—of instrumental music instruction" (p. 165). Allsup suggested that, though this is the tradition, perhaps other more diverse teaching methods can be employed in a band program to enrich students' musical learning experiences.

In the same article, Benedict looked at the band room through the lens of Freire's notion of the relationship between the oppressor and the oppressed. She stated, "both conductors and students are oppressed in this search for perfection; conductors as the tool of the repertoire and students as the handmaiden for the sound" (p. 162). Conductors are oppressed by attempting to live up to the established paradigm put in place by behaviorist philosophy, military history, and perpetuation of tradition, without questioning the problems that lie within it. Students become the conductor's tool to make the perfect sound. Benedict suggested that, instead of perpetuating an oppressor/oppressed ideology,

conductors could give up some control, allow students to have more say, and create space for students to make some musical decisions to better enrich their musical experiences.

Allsup and Benedict concluded that, ultimately, music educators should examine and challenge normative practices, especially the narrow focus on “performance and skills-based approaches [which] can lead to the continued isolation and marginalization of music education from the educational and social mainstreams” (Woodford, 2005, as cited in Allsup & Benedict, 2008, p. 169). They recommended that music educators consider and reflect on our actions in the classroom to help end oppression in rehearsals, affirming the importance and benefits of the give-and-take between teacher and student working together. They suggested that such shared music making could aid in more meaningful engagement with music in school and in our own and our students’ lives.

These recent critiques warrant new paradigms and methods that may allow 1) school band to be more culturally relevant and educationally valid, 2) individual student learning and exploration to have more of a place in the music classroom, 3) directors to incorporate more relevant musical practices and 4) more varied musics in school band rehearsals. My study will be part of this dynamic growing body of literature that explores incorporating more relevant practices and musical genres.

Several additional areas of prior research suggest the need for this study. First, I examine constructivist learning theory within education, educational psychology, and educational philosophy, e.g., Bruner (1976), Dewey (1938/1997), and Vygotsky (1978); and then constructivism within music education, e.g., Holsberg (2009), Shively (1995, 2002), and Wiggins (2009). Next I examine literature that falls within constructivist learning theory: informal music learning, e.g., Campbell (1995), Davis (2005, 2008), and

Green (2001, 2008); student-centered learning, e.g., Blair (2009) and Brown (2008); and alternative approaches in instrumental music education, e.g., Allsup (2002, 2003), Davis (2008), and Larson (2010). Finally, I discuss research on aural learning or playing by ear, e.g., Gordon (1989, 1993, 2003), McPherson (1993, 1995), and Lilliestam (1996). These areas will be discussed in chapter 2.

Several aspects of each of these research areas were useful for shaping and exploring my research questions. The project took place in a student-centered learning environment where informal learning could occur. It involved an intact class of formally trained American high school band students who were competent on at least one musical instrument and were able to read traditional notation. It took place during the regularly scheduled band class period with all band students rather than after school with a small number of band students. I have found no studies that have examined this type of informal learning situation or addressed these questions with a high school band class. I also found no studies that focused on the inclusion popular music and aural learning in the secondary band classroom.

This study adds to the growing body of research investigating alternative paradigms for the band classroom. Specifically, through this study I sought to learn how an entire class of formally trained American high school band students navigated the process of learning music by ear in student-led groups with little to no teacher guidance. I also sought to understand their attitudes toward the project, and the benefits and non-benefits they perceived from it. These are important explorations because, while others have examined how informal music learning methods work in the K-collegiate music classroom, the secondary band classroom has been left largely unexplored. I have chosen

to add that missing link to the growing body of literature on informal learning in the formal music classroom.

Definitions

In addition to informal learning and aural learning, other terms are nested conceptually throughout the study and contribute to the framework upon which this study is built. I provide definitions for these terms here.

Aural Learning

Merriam-Webster's Online Dictionary defines "aural" as "of or relating to the ear or to the sense of hearing" (<http://www.merriam-webster.com/dictionary/aural>). The overarching concept of aural learning in music is discussed using a variety of terminology. For the purposes of my study, the terms audiation, purposive listening, distracted listening, playing by ear, and aural copying are used to identify some of the nuances of the aural learning process. Gordon coined the term "audiation . . . to label the phenomena of hearing and comprehending musical sounds whether or not the actual sounds or notation are present" (Schleuter, 1997, p. 34). Audiation is part of the process in the development of aural skills. Following Gordon, I use the term "audiate" as a verb and "audiation" as a noun when referring to students' ability to hear and comprehend musical sounds.

Other terms also contribute to the definition of "aural learning" used in this study. The terms purposive and distracted listening derive from Green's (2001) study of popular musicians and describe the ways they listened to recordings. Purposive listening is "listening with the conscious purpose of adopting and adapting what is heard into one's own practices" (Green, 2008, p. 7). Distracted listening "occurs when music is heard in

the background, but is not attended to in a focused way, so that it enters the mind almost entirely through unconscious enculturation” (p. 7). In my project, students utilized both purposive and distracted listening. Green’s (2008) idea of “aural copying” encompasses “not only conscious, focused, purposive listening and copying, but also loose imitation related to continuous, unconscious enculturation and distracted listening” (p. 8). Playing by ear, according to Lilliestam (1996), means to “create, perform, remember, and teach music without the use of written notation” (p. 195). As I examine students’ aural learning processes in this study, I am using each of these words as these researchers have defined them.

Student-led Learning

My definition of student-led learning is drawn from research on student-centered learning methods (Blair, 2009; Nanney, 2004; Walker & Soltis, 2004) and learner-led methods (Tseng & Chen, 2010). I view student-centered learning as a continuum based on how much involvement the teacher has, from teacher-led questioning to complete student-led individual or group work. In my study, I have chosen to use the term “student-led learning” to define a broad teaching approach where the teacher shares control of the classroom with students, creating workable spaces and contexts where students are involved in thinking and doing, actively learning by exploring, experimenting, and discovering within “peer-directed” and “group learning” situations (Green, 2008) with little direct teacher intervention.

Informal Learning

Green (2001) defines informal music learning as “a variety of approaches to acquiring musical skills and knowledge outside formal educational settings” (p. 16).

These include Green's (2008) five fundamental principles of informal music learning practices, discussed above. Folkestad (2006) defined formal and informal learning by focusing on four different aspects of learning:

1. The situation: where does learning take place? That is, formal and informal is used as a way of pointing out the physical context in which learning takes place: inside or outside institutional settings, such as schools. For example, "formally and informally trained musicians" in this respect is taken to mean trained in and out of school.
2. Learning style: as a way of describing the character, the nature and quality of the learning process. In this respect, expressions such as "formally or informally educated musicians" rather refer to learning to play by written music or by ear.
3. Ownership: who "owns" the decisions of the activity; what to do as well as how, where and when? This definition focuses on didactic teaching versus open and self-regulated learning.
4. Intentionality: towards what is the mind directed: towards learning how to play or towards playing (Folkestad, 1998)? Within a pedagogical or a musical framework (Saar, 1999)? (Folkestad, 2006, pp. 141-142)

Because I examined the learning patterns of formally trained band students but purposefully provided as little formal instruction for this project as possible, my study's methodology is based on Green's principles of informal music learning. However, like Folkestad stated, my project asked students to use informal music learning *inside the school band classroom*.

Delimitations

The participants in this study were high school band students from one band class in one high school, grades 9-12. All of the participants were experienced instrumentalists from the top auditioned band at the high school. They were in middle school band for at least two years, which ensured that students in the study had prior formal musical training: they were not beginners and had acquired moderate to advanced skill competency on their instruments. I did not examine younger students with less formal

music training or less developed instrumental competency. This study did not consider students not enrolled in this high school band class, i.e., other high school students who may or may not have had formal music training. Therefore, the findings may not be applicable beyond the participants in this particular band class.

In addition, my primary interest in this study was to learn how the students created their arrangements and learned to play them. Therefore analysis of their learning processes was the primary focus and assessment of their final performances was not a goal of this study.

Overview of the Dissertation

In this chapter, I presented an overview of the study: a statement of purpose and research questions; a conceptual framework which includes informal learning and student-led learning; the need for the study; definitions; and delimitations.

Chapter 2 is an extensive review of the literature from the areas of constructivism and aural learning. Within constructivism, I examined literature within the areas of constructivist learning theory, constructivist models in music education, informal music learning, student-centered learning, and alternative approaches in instrumental music education. Within aural learning, I looked at research studies and practitioner articles and books for teachers.

Chapter 3 outlines the method for this case study. I explain the study design, providing an overview of participants and setting, consent procedures and confidentiality, case study design, overview of research design, observations, student artifacts, trustworthiness, and interviews. Data analysis procedures are also discussed.

Chapter 4 presents rich thick descriptions of the four individual groups' cases (Geertz, 1973). Descriptions are based on my observations, individual and group interviews, researcher journal notes, and audio- and video-recordings. I have organized each case to include all sessions of the project, with one or two sessions being described in great detail and the others highlighting the most important aspects of each group's experiences. These case descriptions include brief introductions of the students in each group and illustrate group dynamics and students' learning processes.

Chapters 5, 6, and 7 include a cross-case analysis of data (Creswell, 2007) and relate my findings to previous literature. By comparing groups and individuals, I discuss emergent themes in the participants' learning processes and noteworthy similarities and differences in their responses and attitudes to the project. Each of these three chapters focuses on one of the emergent themes. In Chapter 5, I analyze students' learning processes and their group dynamics. Chapter 6 discusses how students learned to play by ear and the musical elements with which they dealt. Chapter 7 examines students' attitudes toward the project and the benefits they perceived from the project.

Chapter 8 offers suggestions for praxis for large ensembles in elementary and secondary levels and for preservice music teachers, as well as suggestions for future research. I end with some concluding remarks.

Chapter 2 Review of Literature

This study sought to investigate high school band students' processes of learning, as well as their responses and reactions to student-led learning projects where they created and learned to play arrangements of popular songs by listening to recordings. My project focused on aural learning of music students chose for themselves. The goal was for students to create arrangements by solving musical problems via listening to recordings within a small group setting. In this chapter, I discuss prior research related to two areas of inquiry: constructivism and aural learning in music.

Constructivism

I have grouped several areas of research under constructivism. Each area fits under the principles of a constructivist approach to learning as outlined by Wiggins (2009) in Chapter 1. These areas of research include constructivist learning theory, constructivist models in music, informal music learning, student-centered learning, and alternative approaches in instrumental music education.

Constructivist Learning Theory

Rousseau, an 18th century philosopher and writer, published *Emile* (Rousseau, 1955), a treatise on education in which he argued that a child's interaction with the environment was the basis for constructing understanding. Thus Rousseau emphasized learning by doing with the teacher's role being that of presenting problems that would stimulate curiosity and promote learning (Duffy & Cunningham, 1996). This treatise spurred a revolution in thinking about how children learn.

Like Rousseau, John Dewey reacted against the traditional educational framework of memorization and recitation. He called for education to meet the changing needs of

society, in this case the start of the Industrial Age in America and the demands of industrial technology. “Dewey argued that life, including the vocations, should form the basic context for learning” (Duffy & Cunningham, 1996, p. 7).

Dewey was known as the “father of progressive education,” an approach that emphasizes “experience, experiment, purposeful learning, and freedom” as well as “the learner’s impulse and interest and the current problems of a changing society” (Dewey, 1938/1997, p. 10). In his book *Experience and Education* (1938), Dewey discusses traditional versus progressive education and the need for a theory and philosophy of experience. Dewey believed that “It is a cardinal precept of the newer school of education, that the beginning of instruction shall be made with the experience learners already have” (Dewey, 1938, p. 71). Experiences can be educative, non-educative, or mis-educative, with “the two principles of continuity and interaction as criteria of the value of experience” (p. 51), so that growth takes place.

To Dewey, social control played a major role in education, both positively and negatively. Dewey noted that students are usually more than willing to take suggestions from other students when they do not feel as if they are being forced to do so. In progressive education, social control resides within the students and therefore they feel a responsibility to perpetuate organization and order. “It is not the will or desire of any one person which establishes order but the moving spirit of the whole group. The control is social, but individuals are part of a community, not outside of it” (1938, p. 54). This idea of social control as part of a community contributes to a person’s sense of freedom or constraint. Freedom is power, Dewey said, “power to frame one’s own purposes, to judge

wisely, to evaluate desires by the consequences which will result from acting upon them; power to select and order means to carry chosen ends into operation” (p. 64).

Dewey defined the role of a teacher in a progressive classroom to be

intelligently aware of the capacities, needs, and past experiences of those under instruction, and, secondly, to allow the suggestion made to develop into a plan and project by means of the further suggestions contributed and organized into a whole by members of the group. The plan, in other words, is a cooperative enterprise, not a dictation. (p. 85)

Dewey proposed that learning of subject matter can occur through student-led activities, where students have some social control. He also stated that teachers should not be afraid to make suggestions to students; this adds to the sense of a cooperative instead of a dictated environment. Planning must be flexible enough to allow for individual experiences to occur but also firm enough so that growth and continuity are constant.

Constructivism is a theory of knowledge and learning that similarly suggests that learning is based on students’ prior experiences and their interactions with their environments. Phillips (1995) noted that there are various forms of constructivism and sought to examine the “ideological or ugly side” (p. 5) of what had come to be known as constructivism within education. Dividing constructivism and constructivist philosophers and psychologists into three dimensions, he pointed out the similarities and differences between the epistemologies that underlie each type.

Phillips grouped Swiss psychologist Jean Piaget with Dewey together in one dimension of constructivism, pointing out that one major similarity between these two constructivists was their belief that “The construction of knowledge is an *active* process, but the activity can be described in terms of individual cognition or else in terms of social and political processes (or, of course, in terms of both)” (Phillips, 1995, p. 9). Dewey

stressed “the social nature of knowledge construction, both in individual learners and also with respect to the development of the public bodies of knowledge codified in the various disciplines” (p. 9).

On the other hand, Piaget, a cognitive psychologist, focused on children’s individual cognitive development. His stages of development were based on the principal that children learn initially from concrete ideas and advance to abstract ideas based on maturation. Though children’s individual developmental processes are all different and they may advance to each stage at different rates, he proposed general age ranges for each stage. In education, the role of the teacher may change in order to help students advance at their own pace. The teacher should know where a child is in the developmental stages as well as provide and sequence learning activities that challenge the child to progress to the next step or stage. The teacher is not viewed as a fountain of knowledge to fill students' minds; instead, Piaget suggested that the teacher create a balance between actively guiding children’s thinking and providing them with opportunities to explore on their own. Piaget is credited with originating the viewpoint that learning is constructing understanding. Though he did not emphasize the social contexts of learning, he did “move the teaching profession toward a vision of learning in which the learner takes an active role in assimilating new information and connecting it to what was known before” (Wiggins, 2009, p. 15).

Phillips (1995) placed Piaget in yet another dimension of constructivism that he called “individual psychology versus public domain” (p. 7). He also placed Soviet psychologist Lev Vygotsky in this dimension, noting that both Piaget and Vygotsky are considered pioneers in the area of constructivist theory in education and both were

“concerned with how the individual learner goes about the construction of knowledge in his or her own cognitive apparatus” (p. 7). However, Phillips pointed out one of their major differences: whereas Piaget stressed the “biological/psychological mechanisms to be found in the individual learner,” Vygotsky “focused on the social factors that influenced learning” (p. 7).

Social constructivism is a term most closely associated with the work of Vygotsky (1978), a developmental theorist and proponent of social constructivism. Vygotsky believed that cognition developed from social interactions. He viewed cognitive growth as a social process and emphasized dialogue in combination with varied roles of teacher and students as a vital part of learning. He also believed that human beings “actively realize and change ourselves in the varied contexts of culture and history” (p. 131). Culturally and historically, human social existence is interconnected with human cognition: “an individual has the capacity to externalize and share with other members of her social group her understanding of their shared experience” (p. 132); thus, communication with one’s peers would allow students to build new skills and gain new knowledge.

Vygotsky proposed the “zone of proximal development,” or ZPD, which is “distance between the [child's] actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers” (1978, p. 131). Vygotsky’s concept of ZPD is based on the notion that what people already know and how they learn individually are elicited of their own volition according to where they are on their own individual learning continuum. Every child is at a different level of

cognition, and Vygotsky believed that by social interaction between teacher and other students, children would be able to enhance their ZPDs, suggesting that “what children can do with the assistance of others might be in some sense even more indicative of their mental development than what they can do alone” (Vygotsky, 1978, p. 85).

In their edited book *Vygotsky and Creativity*, Connery et al. (2010) continue the discussion of constructivism in education from the view of Vygotsky’s cultural-historical theory to present an enriched understanding of the arts with recent research on play, meaning-making, and creativity. They note the importance of collaborative learning:

Scholars have come to identify that the co-construction of new ideas includes the sharing of risks, constructive criticism, and the creation of a safety zone. Partners can live, however temporarily, in each other's heads. They draw on their mutuality as well as on their differences and background knowledge, working style, and temperament. (p. 9)

Of considerable interest for the current study were similar demonstrations of how students worked together to learn to create their arrangements and how this process might foster the knowledge construction of individual students. To that end, Vygotsky noted,

an essential feature of learning is that it creates a zone of proximal of development; that is, learning awakens a variety of internal developmental processes that are able to operate only when the child is interacting with people in his environment and in cooperation with his peers. When these processes are internalized, they become part of the child’s independent developmental achievement. (p. 90)

Peer-directed and group learning were essential components in my study in helping students learn how to create arrangements of songs by listening to recordings.

Barbara Rogoff is an American educator who looked more deeply into Vygotsky’s and Piaget’s theories about children’s construction of knowledge. In her book, *Apprenticeship in Thinking* (1990), she discussed her perspective of how children

learn. Like Vygotsky, she believed that, not only are children's interactions with adults and more knowledgeable peers an integral component of their learning, their sociocultural contexts also are important. She created a framework for how children learn, stressing:

1. Children's active role in making use of social guidance
2. The importance of tacit and routine arrangements of children's activities and their participation in skilled cultural activities that are not conceived as instructional
3. Cultural variation in both the goals of development and the means by which children achieve a shared understanding with those who serve as their guides and companions through explanations, discussion, provision of expert models, joint participation, active observation, and arrangement of children's roles. (p. 8)

Rogoff believed that children develop into "skilled participants in society . . . through guided participation in ongoing cultural activities as they observe and participate with others in culturally organized practices" (p. 16) with "their caregivers and other companions" (p. 8). The concept of *guided participation* suggests that "both guidance and participation in culturally valued activities are essential to children's apprenticeship in thinking" (p. 8).

American psychologist Jerome Bruner and his colleagues used the term "scaffolding" (Wood, Bruner, & Ross, 1976) to describe the process that

enables a child or novice to solve problems, carry out a task or achieve a goal which would be beyond his unassisted efforts. This scaffolding consists of essentially the adults "controlling" those elements of the task that are initially beyond the learner's capacity, thus permitting him to concentrate upon and complete only those elements that are within his range of competence. (p. 90)

Bruner suggested that effective teachers should provide scaffolding when learners need it and step back when they do not, gradually removing it until the learner can function independently. Bruner also espoused a belief that a learner can and should be actively

involved in constructing subjective knowledge through “doing.” Using language learning as an example, he believed that “reading be recused from its passivity and turned into a more active enterprise” (Bruner, 1966, p. 103). Applying many constructivist tenets to the contemporary classroom, Bruner theorized that students’ motivation to learn is directly related to their interest in the subject matter: “Ideally, interest in the material to be learned is the best stimulus to learning, rather than such external goals as grades or later competitive advantage” (1960, p. 14).

All these pioneers in education and educational psychology have influenced the current study: Rousseau’s premise of students’ interaction with the environment as a basis for constructing understanding; Dewey’s idea of experiential learning, i.e., that prior experiences and interactions with one’s environment help learners construct knowledge; Piaget’s belief that learners takes active role in assimilating new information and connecting to prior knowledge; Vygotsky’s proposition that social factors influence learning and that more capable peers and teachers can help students navigate the zone of proximal development; and Bruner’s belief that active learning, scaffolding, and interest in and motivation to learn are important for student learning. My study is grounded in these constructivist principles.

Constructivist Models in Music

The idea that learners construct knowledge and understandings through social interactions has helped form the conceptual framework for the current study. The research reported in this section of the chapter represents a variety of constructivist approaches in music education. First, I discuss research and literature specifically

examining teaching models in general music education and, second, those focused on instrumental ensembles.

Constructivism in general music education. Wiggins, Blair, Ruthman, and Shively (2006) sought to compare how we teach music with current theories of learning within music education practice. With each author speaking independently, Wiggins invited readers to think about how they could change what they do in light of what is known about “human learning processes” (p. 83). Changes are needed, she says, because 1) much of music teaching in schools is rooted in behaviorism, 2) the public perceives what music teachers do as irrelevant outside of school, and 3) “we need to learn to teach in ways that are most in keeping with the ways people learn” (p. 84). Based on the work of research in other fields, Wiggins et al. have determined that use of the constructivist approach in education is perhaps the best way to teach based on the way that people think and learn most naturally—constructing meaning from experience.

Ruthman contributed to this discussion by contrasting atomistic teaching methods with holistic ones, saying that constructivist teaching provides contexts for learning in which students engage with that “context *throughout* the musical experience” (p. 87), increasing their learning. In the same article, Blair noted the difference between “just *doing* activities and engaging in experiences in which students think musically” (p. 88). She described “*uninformed doing*” as, for example, when students are doing an activity such as playing or clapping that is not situated within a musical context (p. 88). *Informed doing* is when “students are personally engaged with music, solving musical problems” (p. 88). She stated that uninformed doing usually occurs when students are simply

responding to the teacher's instructions, but informed doing results "when teachers get out of the way and allow students to interact directly with the *music*" (p. 89).

The authors argued that as teachers we should design lessons that support "students' ability to think musically and act on their own ideas" (p. 89). Teachers should not omit information or simplify problems to the point where they are not in a real context. In the same vein, teachers need to value students' ideas and let it be known to students that they value their ideas and consider them central to their learning. Finally, Wiggins et al. challenge our profession to make important changes that will "make the work we do more socioculturally and psychologically relevant to our students" (p. 90).

Wiggins (2009) provided a brief overview of the contributions made by Piaget, Vygotsky, Bruner, and Rogoff to constructivist learning theory, presenting several ideas she found critical to creating a classroom environment and curriculum based on constructivism. Discussing the holistic nature of learning, she said, "If school learning is to closely reflect life learning, then a healthy, productive learning environment is also one that includes opportunities for students to engage in real-life, holistic problem solving experiences" (p. 21). Wiggins summarized the basic tenets of constructivist teaching and learning:

- To learn, people must have opportunities to construct their own understanding.
- Each individual constructs his or her own reality through experiences and interactions. The ways we perceive the world are colored by our personal collection of experiences. All ways of knowing and interpreting the world are valid – each for the individual who holds them.
- People are best able to construct understanding when new information is presented in a holistic context – one that enables them to understand how parts connect to the whole.

- Learning occurs in social contexts. Learning and teaching are social processes. People learn through constructing their own understanding as a result of their experiences and interactions with others.
- Shared understanding is critical to the learning and teaching process. Through guided participation, more knowledgeable peers and teacher can support the learning of others.
- School learning experiences should be authentic, real-life experiences.
- Within these experiences, both teacher and peers provide scaffolding that enables the individual to succeed.
- Learners need to understand the goals of the experience and have sufficient grounding in the processes and understandings necessary to achieve goals.
- The ideal learning/teaching experience enables learners to engage in the solution of authentic problems, rooted in authentic contexts. Good problems are constructed in ways that enable learners to find and seek solutions to new problems. Problems for learning should be designed in ways that will foster multiple solutions – and the various solutions should be considered and valued for their uniqueness, creativity, and originality. (2009, pp. 29-30)

Wiggins suggested that in a constructivist environment, students' primary role is to construct their own understanding. She clarified that "as an active member of a music learning community, an equally important role of the learner is to interact with peers to enable everyone's learning and to provide scaffolding for peers when it is needed" (2009, p. 56). Student-student interaction is important for learning to take place, and for this to occur, teachers must create spaces for these interactions to occur. She stated that as students work to solve problems, "their conversations include comments, questions, suggestions, negotiations, evaluations, corrections, and criticisms" (p. 57). Also, she discussed the notion of peer scaffolding, where students clarify ideas for each other and provide support for each other while working on a project.

Wiggins also described the shift in roles for teachers in a constructivist classroom. These include: (1) establishing an environment of classroom interaction; (2) finding out what learners know; (3) encouraging expression of musical ideas; (4) scaffolding learning; (5) focusing student energy; (6) monitoring student progress and understanding;

and (7) providing a model of musicianship. Wiggins cited Rogoff's concept of guided participation as

learners and tutors working together in 'the collaborative processes of (a) building bridges from children's present understanding and skills to reach new understanding and skills, and (b) arranging and structuring childrens' participation in activities, "including shifts in responsibilities as learners move toward competence." (Rogoff in Wiggins, 2009, p. 22)

Wiggins noted that in a music learning community, "all members take responsibility for the learning that takes place—individuals taking responsibility for their own learning and also for the learning of their peers" (p. 24).

Constructivism in band. Researchers have examined applications of constructivist approaches in band classrooms. Fodor (1998) studied the social interactions and musical experiences of two high-school-aged student jazz ensembles at a summer jazz camp. He observed and recorded both teacher-coached and peer-directed rehearsals, and interviewed and questioned the participants over a five-week period. The participants were not classmates during the school year, and Fodor described the interactions as "starting socially and musically from the beginning" (p. 13). The social-constructivist theories of Vygotsky, including the zone of proximal development (ZPD), helped inform Fodor's study, accompanied by the extant research into jazz practice. Results of the two case studies included evidence of student movement through the ZPD, and both verbal and non-verbal patterns of interaction between peers, described as imitation, assimilation, and innovation.

Morford (2007) focused on the idea that postsecondary music programs should incorporate constructivist methods. Based on Wiggins' (2004) tenets of constructivism, he argued that learning should not be based on the passive reception of information, but

that students should be actively engaged in cumulative experiences that create a comprehensive perspective of music. He pointed out that students only construct solid understandings when they find “motivation-oriented relevance” (p. 80). If students are not inherently interested in a subject or concept, constructivist methods may not be the best way for them to learn. Therefore, if constructivism is to be wholly embraced in postsecondary music education, Morford noted that a fundamental change is needed in the structure of American curricular design. He proposed that the applied studio is an appropriate place to envision and carry out constructivist methods by means such as designing the curriculum around students' interests and abilities, and allow them to make decisions about their learning methods and preferences; a portfolio with practice time recorded and a daily thoughts addressing a piece of music, composer, or time period; group lessons for cooperative learning; and encouraging creative discovery by exploring musical interpretations. Though Morford realized that a large-scale shift to constructivism might be unlikely to occur within American higher education, he provided practical applications that could be integrated into existing paradigms.

Shively (1995) presented a constructivist framework for developing learning environments in beginning instrumental music classrooms that would allow learners to have authentic musical experiences in which they had more autonomy in their own learning than in a traditional ensemble classroom. He based this framework on three components. First, the background of the students is important because they bring their own knowledge to apply to new experiences in the band classroom. Next, Shively discussed the role of the teacher in fostering a learning environment conducive to constructivist learning, where the teacher's and the students' roles may shift; because

each student brings valuable knowledge to the classroom, the teacher may become a coach, modeler, conductor, or advisor. Third, the process of learning, which is at the heart of the constructivist classroom, should give learners authentic experiences in which to apply their knowledge. Shively noted that learner autonomy was important because students were free to explore music and to make decisions themselves with these authentic learning experiences. Shively specifically pointed out that ,within constructivist approaches, “large ensembles are still very important, for they provide learners with a large body of literature and require them to listen differently and interact with a conductor, all of which are authentic activities” (p. 179).

Shively (2002) contributed a book chapter based upon his dissertation. The goal of this book, *Dimensions of Musical Learning and Teaching: A Different Kind of Classroom*, was

to provide some information and guidelines for music educators so that they may be better prepared to answer the call [of the rest of the education profession to include the arts as an integral part of education] by translating recent research into practice structuring classroom environments that truly engage students in thinking musically.” (Boardman, 2002, p. viii)

Shively recommended that learners in ensemble classes be encouraged to develop many ways to represent what they know; specifically in the music classroom, these include performance, composition, improvisation, writing about and discussing music, conducting, and/or coaching a group. He recommended that learners be given the opportunity to not only be better performers on their instruments, but also become more knowledgeable, independent musicians.

Holsberg (2009) examined the possibilities of combining John Dewey’s experiential education theory with William Revelli’s band tradition into an educational

framework for instrumental music education. Holsberg developed his “Revelli Paradigm” by reviewing band research and found that it examined the conductor’s craft, rehearsal techniques, and the need for high performance quality. Holsberg stated that in this “Revelli Paradigm . . . because much of the research is based solely on the role of the band director, it will be argued that this position has been considered as more important than that of the student” (p. 41). Holsberg’s “Dewey Paradigm” encompassed several different aspects of “constructivist educational theory” (p. 41), including: historical constructivism; John Dewey’s philosophy; Piaget and Vygotsky; critical pedagogy; creativity and instrumental music; community of learners; and the music education philosophers Reimer, Elliot, and Jorgensen.

The Dewey Paradigm, in contrast to the Revelli Paradigm, places great importance on students’ roles. Holsberg stated that this paradigm presents “a respect for the individual and relationships with others,” and suggests that “context is critically important to assure that students are able to construct new meanings and reconstruct previously held knowledge” (p. 64). He added, “students are encouraged to take ownership of the general principles that are being learned” (p. 64).

Holsberg conducted an embedded case study where he created a curriculum and observed student learning in this paradigm that attempted to merge the Revelli and Dewey paradigms. Participants in the study included students (N = 37) from grades 7-12 in an all-boys parochial school. Holsberg’s curriculum was based on “student-centered, problem-centered, learner-centered, constructivist, and democratic” learning environments (p. 64). He had two different dyad activities: one where students were told to “work on a piece of their own choosing to share with the other students in the class”

where the goal was to “perform it and be critiqued by their partner before going in front of the large group” (p. 132). Students chose pieces to learn ranging from songs from their method books, to learning a section of the *Star Wars* Theme (he did not specify whether it was learned by ear or with notation), to learning the solo clarinet part from Vaughan Williams’ *Folk Song Suite*. The second dyad project was to “compose a solo that showed their expertise on their instrument” (p. 132). Then he set up four different small group activities where students worked on compositions.

Holsberg also designed and taught large group activities with the 37 participating students focused on improvisation and composition. The first large group activity was for “students to create a groove that could accompany a riff from a well-known Led Zeppelin tune, *Dazed and Confused*” (p. 137). Students improvised over it; the teacher stepped in to scaffold the rhythm section, “adding part after part to create a complex rhythmic accompaniment to the wind section” (p. 138). Holsberg noted that the overarching goal of this activity was to “put together a composition/arrangement that included everyone and was a reflection of the group’s level of achievement” (p. 138). Also in the large group Holsberg and the teacher decided to have a musical performing artist give a series of workshops with the students where the students worked more in depth on composition and improvisation activities. Although Holsberg stated that these activities seemed foreign to the students who were used to being in a band setting, the large group seemed to be led by students, while the teacher and researcher “worked on becoming more and more detached from the decision-making process as the project began to evolve” (p. 137).

Holsberg reported inherent problems within the curriculum and discussed that at times the freedom students were allowed in the classroom led to conflict, which then led

to the need for a more structured environment where the teacher gave more directions than was initially intended. However, he also found that in both the large and small ensembles, students took ownership of their learning, learned to work collaboratively together, performed the music they created well, and were highly satisfied with their work. Though Holsberg claimed to merge the two paradigms, it was not clear to me how he included the Revelli Paradigm. It seemed that perhaps the large ensemble situation was meant to be the Revelli Paradigm. But, as Holsberg stated, the Revelli Paradigm focuses on the conductor's craft, rehearsal techniques, and the need for high performance quality. Even in the large ensemble setting of this study, none of these aspects was apparent; the entire process, including the large ensemble activities, seemed to be situated more within the Dewey Paradigm.

Summary: Constructivist models in music. I have examined research on constructivism within music education and more specifically within the realm of band. These studies show constructivism to be an effective approach for learning within both general and instrumental music education; however, constructivist principles have not been as widely studied in large ensemble classrooms. Some music education researchers and practitioners have put forth models incorporating constructivist ideas within large ensembles. The studies I have looked at in this chapter have provided a background for what research on constructivism has been done within music education and in band, and they have provided me with background information to inform my study. The current study sought to add to the examples available for creating a constructivist environment within the large ensemble classroom by allowing students to work in student-led small groups to solve musical problems as they work create arrangements by ear.

Informal Music Learning

The conceptual framework for this study draws from two aspects of Lucy Green's (2001, 2008) research: 1) the facilitation of aural learning through informal learning practices and 2) the fostering of a student-led learning environment. Green (2001) defined informal music learning as "a variety of approaches to acquiring musical skills and knowledge outside formal educational settings" (p. 16). Green's (2008) book described a pedagogical project designed to "investigate whether it would be possible and beneficial to bring at least some aspects of informal popular music learning practices into the realms of the school classroom" (p. 9). In this section, I review research and practitioner articles about informal music learning based largely on Green's works. I have grouped them in terms of informal learning in school, outside of school, and arguments for and against informal music learning practices.

Green's first book, *How Popular Musicians Learn* (2001), is a qualitative study in which she explored how popular musicians learn. She interviewed fourteen popular musicians living around London in 1998-1999; all were white, twelve were male, and two were female. Her in-depth interviews asked about the nature and development of their musical skills and knowledge and their attitudes and values about learning to play popular music. She also inquired about the experiences they had as students in formal music education, their opinions about the current position of popular music in education, and the experiences they had as teachers.

Green discussed in great detail how the musicians acquired the skills and knowledge needed to play popular music. As an overarching learning practice, they all used listening to music and copying it. The participants listened in two ways. One was

purposive listening, which has “the particular aim, or purpose, of learning something in order to put it to use in some way after the listening experience is over” (pp. 23-24). In this they may listen to the harmonies, form, “or other properties of the song” (p. 24). They also constantly utilized distracted listening, or “just listening” to music they liked without expressly trying to replicate it; however, by doing this they were subconsciously developing an understanding of the music. Though they read mostly in tablature, mixed, or partial notation, learning by notation was secondary to learning by listening. All of the participants mentioned that they had developed good aural skills: they could pick out chords and sequences just from listening.

Green found that the musicians practiced when they wanted to, with very little set schedule. They practiced mostly with their bands and less individually, and they practiced songs they wanted to learn rather than learning through disciplined practice of scales, arpeggios, etudes, or tone studies. They only sought technical help after they had grasped all the skills and knowledge they could learn on their own—much later, if at all. They valued “feel,” playing for enjoyment, and developing relationships with others in their bands, and through these aspects, they cultivated technical facility on their instruments.

Though aural learning was central to how the popular musicians developed skills and knowledge, their learning encompassed other strategies, namely interaction with other people through peer-directed learning, group learning, watching professionals, and talking with other musicians. In addition, Green noted that musical enculturation, i.e., immersion in the everyday music and musical practices of their social contexts, was described by all of the participants in her study.

Green suggested that these musicians approached music learning in different ways than most formally trained musicians. She made distinctions between formal and informal music learning. She also made a distinction between the process of introducing popular music, a genre of music, and introducing informal learning practices, a method of learning, into the classroom. She recommended that the learning of popular music incorporate the informal learning practices that the genre embodies, in order for more authentic learning experiences to take place. Green suggested informal learning practices music educators could incorporate into their classrooms. The headings quoted below represent the nine practices she discussed:

1. Enculturation, listening, and copying
2. Developing the ear
3. Practice and technique, discipline and “osmosis” in instrumental tuition
4. Liking and identifying with music and musicians: valuing one’s “own” music, valuing “other” music
5. Friendship, taste, and peer-directed learning in the classroom
6. Use of music theory and music practice: using the keyboard to let students hear the music and learn theory aurally first then incorporating formal notation later
7. Allowing the haphazard manner of learning of songs, theory, chord progressions rather than using a systematic approach of scales and etude exercises
8. Assessment based on the process rather than the product of the music or ability of the musician
9. Placing less emphasis on performance assessment and moving away from the idea of competition among musicians within a group (pp. 186-211)

Informal learning outside school. In this section I review studies about the informal learning methods of non-formally trained musicians. These studies focused on learners of varying ages and ability levels who developed their musical skills outside the school setting. Findings in these studies supported Green’s (2001) conclusions and further informed how I set up my study.

Campbell (1995) explored how rock band musicians teach, learn, and transmit their music in rehearsals. She interviewed and observed nine musicians in two rock bands in Seattle, examining their early influences of home, school, and the media; how they built skills and “got,” or learned, songs in rehearsals; and how they felt about and went about writing original material. Campbell found that, although participants’ early musical influences were varied, most felt that their rock band experiences had little to do with their earlier musical training or exposure. Citing Bennett’s definition that “‘song-getting’ is the knowledge of how to ‘get’ a song from a recording” (p. 16), Campbell found that group members “got” songs from recordings, working either individually or with group members outside of rehearsal, by playing recordings of the song repeatedly with a guitar or keyboard instrument in hand to pick out and play certain aspects of the music. In rehearsal, group members watched and listened to the “musical leader” as they played or sang through songs repeatedly, noting that “musical, verbal, and visual cues” became more important when musicians “have not figured out the chords as yet, or have figured the progression in a different key” (p. 17). In addition to song-getting, Campbell found that skill-building was the second focus in these rock groups’ rehearsals. They worked on both aspects both collaboratively and individually outside group rehearsals. Though every group member was committed to learning the new pieces at hand, they looked to the musical leader for guidance through demonstration and verbal communication. The two groups did not do a great deal of original song writing as they were mostly at the stage in their musical development of “song-getting” and skill-building (p. 19).

Jaffurs (2004) learned that a student in her elementary music class played in a rock band, and she asked if she could observe rehearsals to gain a deeper understanding

of how this group of five elementary-age students (two girls and three boys from three families) formed their group, developed skills, and accomplished their goals. For her ethnographic study, Jaffurs gathered data by observing and videotaping two rehearsals for approximately two hours each. After the first rehearsal, she interviewed the group as a group. After the second rehearsal she “asked the participants to watch the video and use a think-aloud protocol to discuss what had occurred in the rehearsal as they watched” (p. 192). She asked questions about “instrument selection, number of members, leadership, compositional methods, rock group preferences, schedules, their composition process, and parental influences” (p. 192). She also conducted informal interviews with each member’s parents to determine “the role that their parents played in the development of the rock band” (p. 192).

The study revealed that the members of the rock band used informal learning practices of peer learning and peer critique, listening to each other, and being concerned about how the piece should sound. She found that students doodled around a lot, meaning they intermittently played “‘licks’ and ideas that had nothing to do with the music that the musicians were rehearsing” (p. 196). She also noted that her students “love and enjoy music” (p. 199) as an important part of their lives outside of school. These discoveries helped her realize that taking a genuine interest in her students’ music and incorporating their music into her classroom could create a richer learning experience and foster greater achievement. Additionally, her role as a teacher changed, as she began to learn from them, and they learned from both each other and her as the teacher. She now uses both informal and formal learning strategies in her classroom revealing that, though changing one’s role as a teacher can be uncomfortable, allowing students to be able to learn music

they choose within collaborative learning groups increases their intrinsic motivation and provides them with richer learning experiences.

Davis (2005) examined the musical processes of a three-member rock band, their roles within the group, and how they constructed musical meaning. She found that members composed in a collaborative process facilitated by shared musical tastes and grounded in friendship and commitment to music making. They “fiddled” with musical ideas together until they “achieved a complex product reflecting their intended meaning” (p. 26). Members’ engagement with and investment in their music prompted meaningful musical experiences. At the heart of their musical experience were ownership, agency, relevance, and personal expression. Davis noted that the rock band students’ expressive flexibility “was in contrast to what they found in school band music. In the interview, they articulated that the rigid structure of school band music had alienated them” (p. 27). Additionally, in a footnote, Davis reported,

The American high school band setting is driven by traditional band repertoire. Statewide festivals and contests allow band directors little rehearsal time for students to develop their own compositional skills. This is unlike band programs in other countries which do accommodate this much needed opportunity for developing students’ compositional voice. (p. 29)

Informal learning in school. In addition to studying the informal learning of popular musicians, researchers have conducted studies in music classrooms either instituting some form of informal learning as a framework for learning in general music classes (Green, 2008; Hasty, 2009), a band class (Davis, 2008, 2010), and in college music courses (Davis & Blair, 2011; Feichas, 2010; Finney & Philpott, 2010; Karlsen, 2010; Westerlund, 2006; Wright & Kanellopoulos, 2010). I have included these studies because, like my study, they focus on informal learning when implemented inside a

formal music classroom. None of these studies, however, examined a secondary school large ensemble classroom.

Lucy Green's book, *Music, Informal Learning, and the School* (2008), is a study of how she incorporated the informal music learning practices she observed in her earlier (2001) study into formal music education. The aims of her project were to (1) "adopt and adapt aspects of popular musicians' informal music learning practices for use within the formal arena of the school classroom, (2) evaluate the extent to which this is possible and beneficial" (p. 23), and (3) assess the capacity of these practices to "change the way students listen to, understand, and appreciate music in and beyond the classroom" (p. 2).

She set up the overall pedagogy and content of the project in seven stages. The stages were conceived as an "*approach to teaching and learning*" (p. 23, emphasis hers) based on her five principles of informal learning, rather than units within a curriculum.

As noted in Chapter 1, these five principles are:

1. Informal learning always starts with music which learners choose for themselves.
2. The main method of skill-acquisition in the informal realm involves copying recordings by ear.
3. Informal learning takes place alone and alongside friends, through self-directed learning, peer-directed learning and group learning.
4. Skills and knowledge tend to be assimilated in haphazard, idiosyncratic and holistic ways, starting with whole, real-world pieces of music.
5. Informal learning usually involves a deep integration of listening, performing, improvising and composing throughout the learning process, with an emphasis on personal creativity. (pp. 9-10)

In all stages, teachers taught in a responsive rather than directive way to varying degrees, with no teacher-set aims, helping mostly when students asked for help. Many teachers learned instruments alongside the students. Only after students had initially worked on

their own free of teacher interruption, did the teachers offer suggestions or act as “musical models.” The stages each had different foci:

Stage 1: the heart of the project – dropping pupils into the deep end

Stage 2: modeling and learning with popular music

Stage 3: the deep end revisited

Stage 4: informal composing

Stage 5: modeling composing

Stages 6 and 7: informal learning with classical music

Green conducted this study in general music classes in multiple schools; most students did not already play instruments. Each stage lasted from four to six lessons of 50 to 90 minutes each during one class period a week, depending on the school’s schedule. Each stage focused on two or more of Green’s five characteristics of informal learning. Green’s “Stage 1 involved ‘dropping pupils into the deep end’ by asking them to emulate as closely as possible the real-life learning practices of young, beginner popular musicians” (p. 25), with little intervention or help from the teacher. Green emphasized that the heart of the project was in Stage 1, “since it is the one that most closely replicates informal music learning practices as they occur outside school” (p. 24), and because it lays the blueprint for the role of the teacher throughout the project. Students chose their own pop songs, groups, and instruments, and learned their songs by ear in this stage. Students could sing or choose instruments from rock band-type instruments: electric guitars, bass guitars, drum sets, or keyboards. With no previous experience on these instruments, they were learning to play them as they learned their songs.

In Stage 2, Green chose the popular song, “Word Up” by the band Cameo, for all groups to learn. She also prepared curriculum materials and provided some teacher demonstration of how to use them. She retained some informal qualities and student autonomy in that once the teacher had set up the project, the students had to “aurally copy the music from a recording, select instruments, and direct their own learning in friendship groups” (p. 26). The teacher’s role was still one of standing back with minimal intervention. Stage 3 was a repetition of Stage 1, but gave students a chance to build on the skills they had acquired to this point. In Stage 4, students composed their own songs, building on their knowledge from Stages 1, 2, and 3, but with no additional guidance from the teacher. In Stage 5, Green invited a band or duo of popular musicians to come to the school or “organiz[ed] a peer demonstration by a band of same-age or nearly same-age pupils from within the school” (p. 27). Her purpose for this was so that students could observe a “musical model” of song-writing from the world of popular music and see how they put together a song. After the demonstration, the visiting musicians “took up similar roles to the teachers” (p. 27), by offering suggestions to the students as they worked in their groups. In Stages 6 and 7, students used informal learning practices similar to previous stages, but learned classical music using garage band instruments of their choice.

Green noticed that students worked for long periods of time, uninterrupted, not necessarily stopping to fix problems. This suggested to Green that students were experiencing what Csikszentmihalyi termed “flow” and “play.” “Flow” is the “phenomenology of enjoyment” of an activity, with a simultaneous sense of accomplishment (Csikszentmihalyi, 1990, as cited in Green, 2008, p. 56). Students also

“played” for long periods of time without frustration, without rules, and without feeling the need to conform to a pre-determined assignment from the teacher. Students commented that this type of music making was more “fun” than the “normal” curriculum, which involved “a range of activities, including listening, playing instruments, singing, composing and improvising, much of which is done in small groups” (p. 96). Green pointed out that the students described their music class after the project in a much more positive way than before the project. She suggested that perhaps the difference was that, within the informal learning project, students were given more autonomy than the normal curriculum in regards to instrument, song, and method. They were highly self-motivated due to this freedom of choice.

Davis’ (2008) dissertation is a qualitative case study where she studied her own fifth-grade beginning band class. She wanted to find out how informal learning processes could be used in the formal setting to help students to have a better understanding of the musical concepts she wanted them to learn and to be more creative in their music-making.

The class met twice each week for the entire spring semester (six months). She video- and audio-recorded most of the rehearsals and transcribed them as data collection continued. She also asked four students to serve as key informants for the entire data collection period. These students each wore a small microphone attached to a micro-recorder during rehearsals. She also interviewed these key informants. In addition, she interviewed their parents because she wanted to “investigate the influences that family might have had on these children’s musical lives” (p. 147).

Davis' observations and discussions with students revealed a reflexive pedagogy that allowed students' thinking processes to inform her teaching methods. She was able to learn from students as much as they were able to learn from both her and other students in the classroom. She found that informal learning strategies in the classroom allowed students to make more musical connections, which led to more personal investment in their own learning. She also discovered that incorporating informal learning practices in the traditional band ensemble allowed students a richer experience in participation in the band community. Three themes emerged from her study:

1. that individual musical identity emerged from students' expressive decision-making as they worked together to generate meaning;
2. that students' reflexive processes facilitated sight-reading; and
3. that metaphorical process and aural imagery are important in the development of musical understanding.

Davis's (2010) article focused on the third of these three themes. Davis described discussions she had with students, asking them to share with the class processes they used to learn their songs. Andy's explanation suggested to her that "establishing the opening phrase created the impetus needed to begin, and fiddling provided the aural and kinesthetic strategies needed to complete the tune" (p. 10). Following the class discussion, Davis allowed students to apply Andy's process to learn the same song. She did the same with another student's strategies for learning her songs.

Next Davis discussed how students made connections between the songs "We Three Kings" and "In the End" by Linkin Park, illustrating the structural similarities such

as likeness in phrasing, melodic contour, and tonality that helped her student Jade make connections between the songs. She explained that

as Jade metaphorically drew the parallel from the ecological relationships of the informal work at home on one song to what was happening in the formal classroom with another song, and both performed it and explained it in class, she was engaging in what Wenger (1998) describes as “transforming” her experience and “renegotiating its meaning in a new context” (p. 69). (p. 12)

Davis described how the students’ connections of rock songs to folk songs and Christmas carols informed her teaching. Now, when introducing a new piece in class, she often asks her students if the new song reminds them of any other songs they know. She provided several other suggestions for teachers, such as modeling tunes that have similar phrasing and melodic contour and providing time in class for students to fiddle on their instruments.

Davis concluded from this study that “enabling students to discuss their own musical connections . . . can enable students to give birth to their own musical rationality (Greene, 1995) and encourage students’ personal investment in their own learning” (p. 16). She also concluded that learners “negotiate knowledge based on their own experience (Dewey, 1938) and embrace learning based on their own participation in (Wenger, 1998) and investment in that learning” (p. 16). She suggested that as educators, we could draw on the nature of informal learning, musical play, and aural learning when teaching students. Including informal learning in the classroom, she suggested, could provide a “nexus of change in the relationship of student participation in the band community” that is “the catalyst, the germ, really, for meaningful musical rationality” (p. 17).

For his dissertation study and a related article, Abramo (2008, 2011) conducted a case study in which he investigated “how students’ gender affected their participation in a secondary popular music class in which participants wrote and performed original music” (2011, p. 21). He observed three same-gendered and two mixed-gendered rock groups. As the classroom teacher for the study, Abramo invited students in his music classes to participate in after-school rock bands. Participants consisted of 15 students (6 males, 9 females) in five music groups. The participants chose both the number of members and personnel of these ensembles. He observed three same-gendered and two mixed-gendered rock groups. All participants had prior experience on the instruments they selected to perform in the study, and all except two males also participated in the school band or chorus. Observations of rehearsals and interviews were documented through field notes and audio recordings and were then transcribed into typed text. Abramo used open coding to analyze the transcriptions for emerging themes.

Each of the ensembles rehearsed once a week for approximately 90 minutes and met 12 times. Abramo “facilitated the students in the process of solving musical problems but generally waited for participants to ask questions” (2011, p. 27). He also sometimes played with the participants, giving advice on how to resolve musical issues, and occasionally providing opinions on their music. Abramo found that boys and girls rehearsed and composed differently: “Whereas the boys combined musical gestures and nonverbal communication into a seamless sonic process, the girls separated talk and musical production” (p. 21). In the mixed-gendered groups, members of the opposite gender used different learning styles, which caused tensions in those groups. Abramo suggested broadening popular music pedagogies to incorporate different practices.

Hasty (2009) conducted an action research project at the urban high school in central Massachusetts where she investigated the impact of informal popular music learning practices on students' musical meanings and experiences, examining how ninth-grade students in three different general music classes went about creating music projects in a MIDI lab. Each class met every day for 41 minutes. During the last 15 to 20 minutes of the class period, she video recorded class time spent on these projects, took field notes for 25 days of the project, took photographs, and conducted "multiple interviews" (p. 30) over a seven-week period with students both formally and informally throughout the composition process. Additionally, she "collected artifacts such as lesson plans, goal setting worksheets, reflection worksheets, quizzes, and student notes" (p. 30), and took up-close video of performers on the two class days set aside as student performance days.

Hasty examined three projects that the students created during the course of the classes: the Popular Music Project, the Classical Music Variation Project, and the Podcast Reflection. The first week, she provided an overview of the composition projects and an explanation of the podcast reflections, and led the class in a discussion of the differences in the music creation processes between popular and Classical musicians. The rest of the first week, students formed friendship groups of three or four peers, and selected one popular song to use in their recreation of it. They then listened to the song together, analyzed the instrumentation, and "discussed group members' musical experience" (p. 36). After they decided on their songs, students completed worksheets in which each student identified one goal to work toward over the next few weeks that they felt might be advantageous to their musical growth. The teacher provided some examples of what an individual goal might be such as, "You may want to get better at playing with a band."

During the second week, the students worked in friendship groups with little to no input from the teacher. The teacher conducted mini-lessons she said were “short demonstrations during class” that “provided strategies for utilizing MIDI technology, recreating drumbeats, and identifying verse and refrain” (p. 37). After each day’s mini-lesson, the students worked at their own pace in their friendship groups without teacher input. The students played instruments and explored MIDI technology, and worked toward their own individual goals. The teacher took one week off from the project to do class activities unrelated to the project “in order to help the students feel successful and provide a change from the friendship groups” (p. 39). The third and last week of the project, as students worked to finish recreating their popular songs and prepare for the upcoming performance, the teacher made suggestions for how they could successfully finalize their final products and encouraged them to “work together as a band” (p. 39) to coordinate their parts. She also “answered questions and encouraged group members who were feeling frustrated, but generally provided little input” (p. 39). By the end of the last week, the students performed their arrangements; they could choose to perform either for the entire class or just for the teacher. Hasty reported that some groups performed the entire song while others performed only a small section; and she evaluated their performances using a grading rubric.

For the Classical Music Variation Project, which lasted two weeks, students “selected one Classical piece from three choices and manipulated MIDI technology to create their own compositions” (p. 40). They added “lyrics, rhythmic variations, and background beats’ in order to “personalize and update Classical music” (p. 40). Hasty added that this project “encouraged the students to gain familiarity with MIDI

technology, perform Classical pieces on the piano, and create meaningful compositions” (p. 40). For the project, their time was split between practicing classical piano pieces and creating their classically themed compositions. To start the project, she taught them how to play beginner level piano arrangements of *In the Hall of the Mountain King* and *Fur Elise* in a group setting via direct instruction to help them learn proper fingerings, dynamics, and phrasing. The students performed either of the classical pieces for the class and also took a written test. During the same time, they learned “an upbeat piano arrangement called ‘One Night’ from Chris Norton’s Big Beats: R&B Ripple” to which they “jammed as a class” (p. 41) along with the accompaniment CD. Students divided into different friendship groups again, this time of two to three peers, selected workstations, and began creating their compositions for the remainder of that week and the following week. Hasty provided “a great deal of structure as well as general composition guidelines” for this project (p. 42). At the end of the second week, students played their recorded compositions for the entire class.

After completing both the Popular Music and the Classical Music projects, students individually completed reflection worksheets on the composition process. Then, with their original friendship groups (from the Popular Music Project), they did the Podcast Reflection project, “discussing the best and most challenging parts of the projects, their achievement towards the individual goals, and suggested improvements.” (p. 43). Using *Garage Band 3.0*, students imported audio clips from their Popular Music Project as well as excerpts from the original popular songs. Students completed Classical Music Variation Project reflections in a similar process.

Through her analysis of all three projects, Hasty identified three themes. Within the first theme, engagement through popular music, she found that “encouraging urban students to select popular songs validated their preferences and promoted active participation” (p. 57) in music class. She added that focusing on the process of creating rather than the product of the final performance allowed them to concentrate on learning from their mistakes. With the second theme – the importance of empowering students – Hasty suggested that “allowing high school students to set their own benchmarks and structuring assessments around student-created goals was extremely powerful” (p. 57). And for the third theme, Hasty found that “utilizing friendship groups transformed the music classroom from a teacher-centered lecture hall to an innovative, interactive garage band” (p. 58). However, she pointed out the difficulties that proved to make the project overwhelming for many of the students: the absence of teacher instruction sometimes detracted from student learning and group progress; the ambiguous expectations and lack of guided experiences inherent in informal learning practices were frustrating to the students. Hasty specified that “the largest number of students (15) felt that they had successfully achieved their goal over the course of the project, many students also felt they had made little progress (13) or no progress (12) toward their stated goal” (p. 80).

Like Green (2001), Hasty concluded that though the Popular Music Project was initially exciting for the students to be able to choose friendship groups and work on music they chose, they later became frustrated with their lack of ability to learn the instruments. She concluded that the project was too difficult because they “had not received adequate school music training to undertake such an enormous endeavor” (p. 80); Green did not report similar student frustration. Hasty proposed some modifications

to Green's model of informal learning that might ensure more positive learning experiences for students, such as embracing students' choices of music and recreation of small sections of the song instead of the whole song, as well as more teacher scaffolding throughout these types of projects. She also suggested that, for these urban students in this general music class, "necessary preparation and instruction would include carefully planned guided experiences and meaningful exposure to musical concepts" (p. 77). Hasty suggested further extensive study of informal music learning strategies in schools across America and of the inclusion of popular music in the curriculum.

Westerlund (2006) studied music teacher education curricula at the Sibelius Academy, the University of Jyväskylä, and the University of Oulu in Finland. These three institutions' curricula require that preservice music teachers be competent in using rock band instruments as well as "knowledge of studio techniques, making arrangements in different popular music styles, and on-stage performance" (p. 119). The purpose of Westerlund's study was to examine whether participating in the informal learning practices of garage rock bands within formal music education could develop preservice teachers' musical expertise in the realm of informal learning. Westerlund further sought to determine whether and how garage rock bands could serve as models for music learning in formal educational environments in K-12 music classrooms.

Westerlund made a distinction between the apprenticeship model as it is used in the Western classical music tradition and the garage rock band model that approaches music learning in a different manner. The apprenticeship model is based on

hands-on knowledge, know-how, or skill According to this tradition, the master teacher knows the goals and how they should be attained; the model

presumes that the student recognizes the teacher's given goals and the means of achieving them, and is motivated to do so. (p. 120)

Westerlund noted that, while the Western classical apprenticeship model of teaching may effectively transmit skills and knowledge, this model “burdens music educators perhaps more than any other” (p. 120) by focusing on the teacher’s expertise and goals for the student, instead of on the student’s engagement and choice in the learning process. Similarly, Green (2001) discussed the apprenticeship model as a major method the popular musicians she studied used to learn: they watched professional musicians and talked to other musicians.

Green (2001) reported that the term “situated learning,” another name for apprenticeship learning, was created by Lave and Wenger (1991), who defined it as “legitimate peripheral participation in a community of practice, turning into full participation” (from Green, 2001, p. 16). Westerlund noted that this idea of situated learning overlaps into the informal learning practice of enculturation, listening, and copying as well as the role that relationships with band members played for these popular musicians. The programs at the three universities in Westerlund’s study offer ideas for other music teacher education programs to create multidimensional learning environments, based on learning processes appropriate to various musical genres.

Karlsen (2010) reported on BoomTown Music Education, a two-year higher education music program for young rock musicians in Sweden. This program was developed based on the methods and pedagogical philosophies of two Swedish music education scholars, Anna-Karin Gullberg and K.G. Johansson. As summarized by Karlsen, Gullberg (2002) examined how rock musicians interact with each other and learn music and Johansson (2002) looked at rock musicians’ strategies as they play by

ear. Karlsen sought to problematize the BoomTown pedagogy and focus “especially on its self-claimed informality and authenticity” (p. 36). He also wanted to relate his findings to the larger debate on “the inclusion of popular music and informal learning practices in school-based music education, namely that of informal approaches’ ability to remain informal when included in formal education” (p. 36).

The Boomtown program combines formal music education and informal learning for the students who participate Boomtown does not have “regular teachers,” but instead, “supervisors, speakers, guest musicians, and pedagogues” are hired based on the needs of the students (p. 39). Students who apply to BoomTown are usually already-existing bands. The entrance exams focus more on “originality and personal expression than on technical skills or knowledge of a certain kind of repertoire” (p. 39). If a band gets accepted, they get a rehearsal room that is also a fully equipped recording studio to which they have 24-hour access. Each student decides on their own goals and on how to achieve them, and “with this freedom follows also the responsibility for assessing whether or not you are progressing according to your plan and to what extent you have reached your goals” (p. 39).

Karlsen did not describe his methodology in detail, but he seemed to have visited the school multiple times and talked with the students to gather data. He found that students described a typical day resembling a day he would have had at a formal conservatory music school. He described it as such:

Most of the time they practised their main instrument, either alone, in their regular band or with other fellow students. Then, they would attend lectures, classes and instrumental lessons plus occasionally participate in larger performances organised by the school. In addition, they would keep up a busy musical life outside of the school itself. (p. 42)

When he told the students it sounded similar, they could not understand how it would be at all similar to their experience.

Karlsen reported that students' experiences at Boomtown were largely social. Citing Wenger's (2006) concept of "social learning systems," he pointed out that learning in a social manner provides the context for a meaningful learning experience. Noting that this seems different than traditional conservatory learning, Karlsen asserted that this type of social learning system should include "offering students the opportunity to be socialized into communities of practice which correspond with their identity(ies) – musical or otherwise" (p. 43). Karlsen stated that in the social learning environment of Boomtown, the students experienced an authentic and meaningful learning environment "because it [took] into account their identity as popular musicians and provide[d] them with tools to become such and to work efficiently within the wider popular music communities of practice" (p. 44). Karlsen concluded that "this particular education ends up somewhere in between [the formal/informal environment], being built on principles found within informal arenas mainly, but still unable to escape its formality" (p. 44). He also found that in relation to inclusion of informal learning practices in formal music education, instead of discussing learning in terms of formal or informal, "rather, we should ask how we might create meaningful learning environments in terms of fulfilling students' needs for authenticity and corresponding with as well as contributing to developing their identities" (p. 44).

Finney and Philpott (2010) sought to examine "the background of informal learning practices (ILP) in English music education and some attendant issues surrounding initial teacher education." (p. 7). In addition, they sought to find ways to

develop a “meta-pedagogy” for ILP in music. Participants were 20 music graduates who were mostly formally educated, but who also had “a hinterland of unaccredited musical practices: busking, musical doodling and private song writing, for example” (p. 12). For the project, the researchers examined a portion of a one-year course, this year specifically aimed for students in this particular course to reflect on the “subtle interplay of informal-formal learning orientations embedded in student teachers’ own developing musicianship” (p. 12).

The researchers set up and observed a project that took six sessions of class time. Students were initially told to bring an instrument to class for the first session. They formed four groups of their choosing, and the researchers then gave them a CD, and asked them to copy what they heard and to prepare a performance of it. After this initial session, the student teachers were divided into two 10-member groups and each group was given “five one-hour weekly self-regulated learning sessions where, using whatever resources were available, they were asked to learn something new and to help each other in the process” (p. 13). The researchers utilized a case study approach to gathering data. Finney became a “participant as observer” (p. 13), observing and sometimes videoing sessions. He also wrote down his observations of participants’ patterns of response. At the end of the five sessions, “five students were invited to individually digitally record their thoughts about the sessions and to reflect on how they had been learning” (p. 13).

The themes the researchers identified were:

1. First encounter: The researchers discussed how students started to navigate this new environment: who would be the “knowledgeable other” and how would everyone navigate their roles?

2. Moving on: Students worked individually, in pairs, and in small groups, and one time all together as one large group. After the initial session, participants changed up their groupings based on what they wanted to do and create because “they were now deciding what to learn, how to learn it and who to learn it from” (p. 15).
3. Adaptation and epiphanies: The students discussed learning to take risks, finding out what works and what does not, and learning in different ways than just formally.
4. Ivan learns inside the music: Ivan had both formal and informal experiences prior to the class and drew on both of them to inform his learning.
5. Dissonances and resolutions: The project illustrated that some students struggled to reconcile their formal musical education with a way of learning they had not experienced before. Although these student were initially not comfortable with the project, they worked through their discomfort and learned from the experience.
6. Morphing the habitus: Students changed their attitudes about informal learning and seemed to become more open to the idea of learning in new ways.

From their findings, Finney and Philpott proposed the concepts of “living” and “excavating” learning as important meta-pedagogical tools in the process as student teachers learn to teach music. They promoted the approach of some music education programs, which “unselfconsciously embed opportunities for self- and peer-directed learning thereby modeling and ‘living’ the informal process” (p. 11). Finney and Philpott explained “excavating” as “facilitating student teachers to use theoretical tools to

interrogate their ‘lived’ experience; to theorise themselves as a result of experience and to encourage the mutual interrogation of theory and experience” (p. 11).

Feichas (2010) conducted an ethnographic study that examined “the differences in students’ attitudes towards learning music in a Brazilian music higher education institution, while taking into account their different music learning backgrounds” (p. 47). Feichas sought to examine non-music majors taking the music classes required of all students at universities in Brazil. Feichas interviewed, sent questionnaires, and observed first-year students at the university over a three-month period. The aim of the questionnaire was to provide basic data that she used to help select a sample of students for interviews from the larger population. From the questionnaires, she classified the most representative students from both the popular and classical groups. However, she found students who responded that they had learned music in school also indicated that they learned by themselves or “within a pop band” (p. 49), so she created a third group of those who had a mixture of both informal learning and classical training. Feichas immersed herself in the school, being there all day for an “intense period of time” (p. 49). It was important for her to observe and interact with the students in the school and to understand the everyday life of the music school, “starting with the entrance hall where many people convened, as well as the canteen and the corridors, where the students waited for their lectures” (p. 49). By doing this, she was able to discover many details that the lecture-hall alone could not provide. She talked informally to members of the staff as well.

The methods most of the classical students employed to learn and make music in Feichas’ study were connected to the ways they learned in their formal training, i.e., “a

systematic way of acquiring musical knowledge” (p. 51). The popular music students learned via informal learning methods similar to the way popular musicians in Green’s (2001) study learned. Students in the mixed groups seemed to employ methods from both their formal training and informal learning experiences. Feichas also noted that some students started learning in a formal sense first in life, then later developed some skills from the informal music world. Also, though she said it was less frequent, some students began learning informally and then sought out formal education later. She stated that the mixed-popular group (students who utilized more informal learning methods than formal) “seemed to keep a balance between the practices of both sides” (p. 52).

Feichas concluded that formal and informal modes of learning have “advantages and disadvantages in preparing music students to encounter the world of university music education” (p. 54) and that university students need to experience both modes. She presented ideas that could be incorporated into a university aural training course. These include bringing in informal practices into the music classroom through such venues as warming up, which could provide spaces for

experiences of socialisation through exercises that bring people together in an interactive way, exploring their creativity and sense of playfulness, to release tensions and inhibition, creating an atmosphere and environment that facilitates making music together. (p. 55)

Feichas suggested that students bring different variations of genres and styles of music to class to analyze and transcribe to develop skills for “listening to music in deep ways” (p. 55). She also suggested that students learn from each other by discussing what they hear. Finally, she recommended composition assignments where students have a venue to be creative, to perform, and to interact with peers in a variety of ways.

Feichas concluded that because universities accept a wide range of students with varied backgrounds, music programs should expand to provide varied musical knowledge and styles that appeal to a variety of music students. She said for this reason it is important to include formal and informal modes of learning into music classes at the university level.

Wright and Kanellopoulos (2010) explored improvisation as an informal music learning process in the context of a course for student teachers in two Greek universities during 2003-2007. They were interested in how the student teachers perceived improvisation in relation to their identities as musicians, music as a school subject, and children as musicians. Using a narrative methodology, they examined data from the reflective journals that 91 student teachers kept as part of the participation in the course, identifying three themes through their analysis of the journals:

1. Autonomy: in search of foundations. Students wrote about how they created their own goals to develop their individual and collective identities.
2. Developing the self: Students wrote about the shortcomings of the way they had been formally musically educated. When they were unable to rely on the ways they were taught to solve problems, they explored alternative answers to questions that arose.
3. Developing an open attitude toward children and music: Wright and Kanellopoulos summarized this theme by stating that, "Through involvement in improvisation, these obstacles [that conservatory education may have placed in our thinking] were gradually removed and opened the way for more open approaches to teaching" (p. 80).

Wright and Kanellopoulos put forth an argument that “improvisation, as a particular type of informal music learning process, has an important role to play in fostering the qualities required of teachers to work with informal pedagogies in music education” (p. 71). Their findings suggest that improvisation as an informal learning method may have a profound effect on students’ “identities as learners, their attitudes towards children and their creative potential, and the interrelationships of the notions of expressive technique and culture, thus becoming ‘an act of transcendence’ (Allsup, 1997, p. 81)” (p. 71).

Davis and Blair (2011) examined the experiences of American university students in a secondary general music methods classroom and their “engagement of informal learning processes in order to foster a vision and formulate a pedagogical plan for the incorporation of popular music in the classroom” (p. 124). For the introduction of the project, the teacher chose a song (The Beatles’ “Day Tripper”) and the class worked together to create a cover of the song. She planned a second step, to break into two groups and create a cover of a song of their choice. However, they did not get to the second step because, instead, Davis felt it more educationally beneficial to lead a frank discussion, addressing the “difficulties and resolutions” the students experienced as a class (p. 130). They discussed the importance of disequilibrium, breaking down barriers, and how students change the way they construct ideas, understandings, and empathies during the project. Students (and Blair as the teacher) experienced disequilibrium in terms of the uncertainty of being uncomfortable with the experience of learning a song by ear and not being sure how to proceed in that type of musical environment. Davis was unsure how much scaffolding to provide the students, not wanting to give too much

direction, “thus ‘easing’ the needed disequilibrium” (p. 130). Davis had to help students break down barriers as to what they thought about playing by ear. She did this by guiding the students in a discussion of an analysis of the song they covered. Through the process of this discussion, the students “became more comfortable and their ability to value the use of popular music in the classroom, shifted dramatically” (p. 130). Students were able to hear sections in the music that they did not originally hear and they were able to have further discussion about how to teach a lesson with this song in a K-12 classroom. As students participated in class discussions, readings and online journaling, they seemed to shift their thinking to understand “that popular music was valid in the curriculum on its own merit, not merely as a tool for approaching other musics,” and they seemed to develop “a more mature understanding of ‘meeting the child’ through an informal process” (p. 133) that may be outside of the teacher’s comfort zone.

Davis and Blair suggested providing students choice in study of “many kinds of music and an understanding of genre” to allow further exploration into students’ musical preferences (p. 133). Studying popular music in this way could also develop understandings of the role students’ music and musical preferences play in developing their identities. They also suggested that, “We should use [popular music] to reopen possibilities for critical and creative thought and action, both in our students and in ourselves” (from Bowman, 2004, in Davis & Blair, 2011 p. 136).

Comparison of formal and informal learning. A third category of research on informal learning is recent studies and critiques that have sought to compare formal and informal music learning. These studies aim to distinguish the benefits and drawbacks of each approach as well as to further refine the definitions of the two methods (Allsup,

Jones, Clement, Heuser, & Greher, 2008; Folkestad, 2006; Jenkins, 2011). I have included these studies because they focus on the melding of informal learning in a formal setting, a premise on which my study is based.

Folkestad (2006) reviewed research studies that focused on formal and informal learning situations and practices, noting that overlap may occur between the two. Folkestad recommended that a static view of formal and informal learning as separate entities be replaced with a dynamic view in which “what are described as formal and informal learning styles are aspects of the phenomenon of learning” (p. 142) in any setting, both in and outside of the school classroom. He thus placed learning on a continuum and concluded that the teaching and learning of music should include elements of both formal and informal learning practices.

In a philosophical examination of formal and informal music education practices, Jenkins (2011) sought to clarify the value of using informal practices in formal music educational settings. He examined the theoretical underpinnings of informal learning practices and compared them to those of formal learning practices. Jenkins opened by stating his belief that a true music education should contribute to a student’s ability to “exercise autonomous judgments in particular contexts and use that judgment-making ability to enhance the living experiences of oneself and others” (p. 180). He asked, “If informal learning is so pervasive, then why is there a need for formal learning?” (p. 181), then clarified what informal and formal learning methods include. He defined formal learning as controlled and controllable, whereas informal learning is not and requires self-motivated effort. Formal learning is usually implemented by a teacher with a plan or a method, and the student is expected to meet the planned goals within a curriculum.

Jenkins suggested that informal learning may be more “*context-sensitive* and/or *experience-dependent*” (p. 182) and requires hands-on experiences, whereas formal learning is often best used in situations where the material has mostly conceptual content. The ends of formal learning tend to be clearly defined before the means, but in informal learning the end is either not defined or may be “even clearly separate from the means” (p. 183), allowing learners to choose the means they deem correct.

Jenkins proposed a continuum with formal learning at one end and informal learning at the other. He described pure informal learning as resembling a child at play, and pure formal learning activities as controlled to strictly fit the means to the desired ends with no room for exploration. Jenkins suggested most teachers fall between the two ends in a mixture of formal and informal learning, employing informal strategies to complement formal approaches.

Jenkins pointed out advantages of both formal and informal approaches to learning. With formal education, results can be more reliably assessed. The teacher may choose to expose students to music they have not heard before and broaden their musical horizons. In addition, formal music learning exposes students to important concepts and techniques that they may not encounter in informal learning. However, it could be criticized for its rigidity, which tends not to take into consideration students’ previous experience. This rigidity also does not lend itself well to a quickly changing world. Additionally, Jenkins pointed out that classical music is the genre most often taught with this method, noting that because of perceived irrelevance of classical music to most students’ lives, they may not be able to understand, appreciate, or relate to this type of music. Advantages of informal learning, according to Jenkins, are that it tends to come

from a “relaxed, almost playful attitude” (p. 188). Learners may feel more empowered because they can be more in control and able to explore. A disadvantage of informal learning may be that because the students are in charge of their own destinies, the lack of structure may not prompt them to explore new or different music.

Jenkins examined Green’s (2008) informal music learning project because it is a “particularly expansive and systematic treatment of the topic and is thus a good starting point for considering how these methods can be developed in practice by music educators” (p. 189). He stated that music education “should be alert to how people learn in everyday life, because that is where every music student will have to live” (p. 193). Jenkins asked, “How valuable are informal learning practices in music education?” (p. 193). Based on the premise that informal learning allows students to develop self-identity in music and perhaps in life, he answered the question by stating that, “a good music education should bring about a fundamental change in the student’s self-identity and foster the ability to make critical decisions both about music and about life” (p. 193). He concluded by stating that either informal or formal musical approaches alone may be “educationally insufficient” (p. 195), arguing, “informal instructional practices in music education can, along with formal practices, contribute to the formation of an individual learner’s identity and agency through engagement with music” (p. 179).

Five authors presented papers in a symposium at the 2008 American Educational Research Association conference. The papers were in response to Lucy Green’s work, identifying the possibilities that inclusion of informal learning practices could add to school music education, but also pointing out areas of concern. Their purpose was

. . . to present the perspectives of university music education faculty members who describe the ways in which they are fostering informal learning in music education majors (rock band, guitar, etc.) and the theories underpinning the approaches taken. These programs are designed to provide future teachers with instructional experiences that go beyond Lucy Green's descriptive ethnographies of informal music learning to inform practice in music teacher education that is theoretically grounded. (Symposium abstract, in Frierson-Campbell, 2008, editorial)

One of these five, Randall Allsup (2008) argued, "a sound educational framework must be in place should teachers and teacher educators wish to 'operationalize' the practices of popular musicians" (p. 1). Allsup addressed four concerns of researchers in the field of music education in how they proceed with second-wave research of how informal learning could play out in music education:

First he stated that research needs to differentiate popular music from informal learning, noting that Green merged "informal learning with a genre-specific art form when she designed her Musical Futures Curriculum around the practices of 'Anglo-American guitar-based music makers' (2001, 12)" (p. 3). This type of merging of ideas could lead to narrowing musical possibilities rather than expanding them. Second, Allsup asked, "How will research studies inspired by the informal practices of popular musicians instruct the training of future music educators?" (p. 4). He noted the importance of second-wave research to "empirically describe and philosophically justify that which it seeks to replace or modify" (p. 4). In this regard he expounded upon not conflating the ideas of "school" and "schooling", "formal learning" and "formalism," or "informal learning" and "informalism," so that teacher educators can properly prepare preservice teachers to teach effectively in these new roles.

Third, Allsup asked, "What constitutes teacher quality in informal or popular settings?" (p. 4). In Green's Musical Futures curriculum, Allsup stated that it may appear

to an observer that the teacher does very little because students choose their friend groups and their music and they spend most of their time copying what they hear from CDs. He specified that in this curriculum,

where professional educators are prohibited from setting explicit educational targets and learning objectives, even a friendly critic is left wondering just how a music educator is trained in informal teaching, to what uses are put a teacher's content expertise, and the degree to which an acquaintance with instructional theory is even necessary. (p. 5)

Allsup made the point that, because informal learning does not appear to utilize teacher expertise, Green's research could have the unintended effect of fueling the argument of critics who seek to dismantle schools of education. He cautioned music education researchers against embracing informal learning "as a reaction to a history of poorly trained music educators, . . . we may be sowing the seeds of our own demise" (p. 5). So that music teachers do not become outsourced to less-educated labor, Allsup suggested second-wave research of this topic needs to "provide broad and self-critical illustrations of what constitutes a qualified, indeed highly qualified, music teacher (Cochran-Smith 2002b; Darling-Hamond & Berry 2006)" (p. 5).

The final concept Allsup discussed was the methods and processes of informal learning, asking if they are "equal to the unique problems that popular music brings to the classroom" (p. 5). He also asked how students become media literate in informal settings, fearing that a curriculum based on the copying of CD recordings apart from adult interaction is educationally naïve, and wondering what students may not be learning in this type of context.

Ultimately he thought that the work of Lucy Green (2001) offered a way of "locating education in the practice of teaching and learning popular music" (p. 1). Noting

that Dewey viewed informal learning as spirited and natural, he also pointed out that Dewey worried its gains were too random and its outcomes too narrow. Ultimately, advocating for informal learning to some degree and in some classrooms, Allsup believed that “the teachers best capable of managing such a task will be those music educators with a practiced democratic outlook” (p. 8). Allsup advocated for a “new wave of expansive research in this area” (p. 8), specifically concerning what constitutes a qualified music teacher and the need for “purposeful, democratic spaces where teachers and students come together, not through the casualties of formalist or informalist ideologies, but through methods of living and learning where plausible human interests intersect with shared desires” (p. 7).

Jones (2008) looked at data from both the 2006 Gallup poll and musical instrument sales to identify the types of music and genres that Americans were interested in pursuing socially. His research revealed that sales of rhythm section instruments of piano, bass, guitar, and drums accounted for 73% of instruments played outside of school, while band and orchestral instruments accounted for just 27%. Jones suggested that music teacher education programs should broaden secondary instrument class offerings to include rhythm section instruments so that preservice music teachers will be more prepared to teach these widely used instruments as well as musical genres in which they are played.

Ann C. Clements’ (2008) apprehensions with Green’s version of informal music learning concerned the teacher’s role and the term “popular music pedagogy.” Believing that the music teacher brings “intuitiveness, creativity and ability level” that can help students produce an even better musical product, she suggested that

music teachers [should] play a role that is more similar to facilitator and “sharer” in the learning process and that their role be developed from expression of their personal multi-musicality, their understanding of their students’ needs, desires, knowledge and skills, and the musics and cultures that surround the school building within the community (both locally and virtually). (p. 7)

She believed that Green replaced one prescriptive pedagogy (formal music learning) with another prescriptive pedagogy, which may not be wise. Clement wished for “formal music education to work to capture the freshness – the soul of the organic ways in which music is taught and learned in multiple avenues” (p. 9).

Heuser (2008), a fourth Symposium contributor, described a class he teaches in which students learn a secondary band instrument via Gordon’s Music Learning Theory and learn guitar via Green’s informal learning method of “listen-copy-play.” Though many of the students in his classes found importance in both ways, they continued to hold on to “the way they were taught” and were not open to embracing new ways of learning music. One student reflection read:

As a music educator, the informal style of learning is much more difficult to incorporate. It is often lacking in a specific direction except for that of where the student wishes to take it. I cannot envision a direct application for a music educator to use this method of learning. (Student reflection June, 2007). (p. 9)

Other student reflections echoed this thinking. Heuser concluded, “These reflections express reticence to even entertain the possibility of change among undergraduate music education majors” (p. 9). He charged university music teachers to demonstrate for undergraduate music students ways to incorporate both methods of aural learning in their music teaching to “strengthen rather than replace traditional music education programs” (p. 9).

A fifth contributor, Gena Greher (2008), supported many aspects of Green’s informal learning pedagogy, casting a wider net for the development of aural skills,

engaging students in the socio-cultural “back stories of music,” incorporating students’ own musical choices into formal music education, and including culturally relevant pedagogy. However, she cautioned that informal learning practices taken at face value could leave the field of music education “heading down the path of a narrowly cast curriculum, leaving little opportunity to actually help students expand their spheres of listening and musical understanding” (pp. 1-2).

Summary: Informal music learning. I have examined literature for informal learning outside school, inside school, and research comparing informal and formal learning. Based on the findings of these studies, it appears that some informal learning processes are similar across settings. Rock musicians tend to work best in groups, communicate ideas through sound, work together informally, and compose and rehearse simultaneously. Several studies examine informal learning methods within K-12 American music education, and have found both beneficial and problematic aspects of informal learning within the formal classroom. However, as shown in the studies reviewed in this section of the chapter, new questions and methods may arise when one imposes informal learning practices onto students who are highly formally educated on a band instrument, who rely on traditional notation to perform music, and who play in traditional ensembles. The current study sought to examine how formally educated high school band students would learn to create and learn songs by ear via use of informal learning methods within a classroom setting.

Student-centered Learning

As I discussed in Chapter 1, the term “student-centered” is an umbrella term that encompasses varying degrees of student choice and autonomy as well as different levels

of teacher involvement, scaffolding, and direction. Green (2008) noted that peer teaching and learning have some qualitative differences from expert-to-novice (or teacher-to-student) teaching and learning:

These can be considered in three main ways. One is that learners in the informal realm seem to experience a qualitative difference between being taught by someone who is designated as a teacher and being taught by someone who is a peer, regardless of the particular teaching method. This difference relates to issues of power and expertise which frame the teaching and learning relationship. Another is that . . . observers and learners reported that peers *did* use different methods from teachers. Thirdly, informal learning for many learners *includes teaching* one's peers, and in such cases there is evidence that learning takes place through teaching. (p. 121, emphasis hers)

While Green (2008) did not specifically use the term “student-centered learning,” the students she worked with participated in informal learning projects within small groups with minimal teacher intervention. She discussed the student-centered learning environment created in the classroom using the terms group learning, peer-directed learning, and peer teaching and learning within her five major principles of informal learning. I suggest that in these various forms of student-centered learning that Green mentioned, students take part in the collective actions of a group, actively learning by exploring, experimenting, thinking through problems, and discovering solutions with each other. My study's method involved student-centered learning, where students were given a large degree of choice and where the teacher provided little input into student learning.

The literature I have examined covers varying degrees of a student-centered classroom in general education and in music education. These studies use several different terms to encompass similar aspects of student-centered learning, including student-centered learning, cooperative groups, learning communities, student-directed

instruction, collaborative learning, peer-directed learning, learner-led instruction, and learner-centered instruction, and a complete review of all the related studies is beyond the scope of this dissertation. I first give a brief background from researchers and practitioners in general education (Bennett & Dunne, 1992; Bielaczyc & Collins, 2000; Brown, K., 2003; Felder & Brent, 1996; Nanney, 2004). Then I provide summaries of literature that examines the teachers' perceptions of and degree of including student-directed instruction in their classrooms (Bazan, 2011), literature examining music students' roles and processes in a student-centered music classroom (Blair, 2009; Brown, J. 2008; Tseng & Chen, 2010; Webb, 2012), and collaborative learning in the music classroom (Goldberg, 1990; Hoffman, 1991; Keil, 1987; Luce, 2001).

Studies in general education. Within general education, research has compared student- and teacher-centered approaches. Nanney (2004) states that, in a student-centered environment, “the instructor facilitates the learner individually or in cooperative groups by posing problems, setting time limits, providing varying amounts of guidance, asking leading questions, choosing students to respond, or giving positive responses” (p. 2). In contrast, a subject-centered classroom is one that focuses on the transmission of important subject-matter to the next generation, development of literacy, skill acquisition, mastery of basic facts and theories, and promotion of critical thinking, problem solving, and good work habits (Walker & Soltis, 2004). A teacher-centered environment may be one where “students are primarily responding to the teacher, waiting and watching for cues as to how to interact within an activity” (Blair, 2009, p. 44).

Kathy Brown's (2003) article examined “whether moving from a teacher-centered to a learner-centered approach requires a transition or a paradigm shift” (p. 49). She

examined literature within education concerning the assets of teacher- and learner-centered approaches “for meeting the challenges of 21st century teachers” (p. 49). Brown defined both approaches as well as a thinking-centered approach, and compared learner characteristics and teaching practices of the learner-centered and teacher-centered approaches in general education. Both approaches “recognize the student as a key factor in improving student achievement” (p. 50) but the methods for how students achieve are different.

According to Brown, characteristics of the learner-centered approach include positive learning contexts, focus on metacognition of individual students, and the culture of the learning context along with content and methods used. With this approach, students are responsible for their own achievement. The teacher creates “an environment where learners can make learning connections” and provides students with “a variety of instructional methods and techniques” so that learners can construct their own learning (p. 51).

In the teacher-centered approach, the focus is more on content than student processing. Teachers are often “driven to meet accountability standards and often sacrifice the needs of the students to ensure exposure to the standards” (p. 50). This approach places control for learning in the hands of the teacher’s expertise and content knowledge to help learners make connections. Effort to better understand how learners process information is secondary.

Both approaches allow teachers to “provide background data and content, and pose questions that students can use to create meaning” (Brown, 2003, p. 53). They also make use of the teacher’s expertise and content knowledge. However depth of

understanding may be different due to difference of methodology. In a learner-centered environment, teachers use differentiated instruction, which Tomlinson (as cited in Brown, 2003, p. 52) defines as “a way of thinking about teaching and learning that is based on a set of beliefs that students who are the same age differ in their readiness to learn, their interests, their styles of learning, their experiences, and their life circumstances.”

Brown describes a third approach, thinking-centered learning, which includes learning practices that foster critical thinking and problem solving, where students work collaboratively in groups to solve authentic problems. The goal is to “get students focused on thinking about the content they are learning” (Perkins, 1994, as cited in Brown, 2003, p.53). Ultimately, Brown proposed that incorporating a learner-centered approach requires a paradigm shift: “There must be a commitment to reflection, creating thinking-centered learning, and constantly assessing the quality of instructional programs” (p. 54).

For students who are rooted in more traditional, teacher- or subject-centered instructional methods, the shift to a student-centered method in which they take responsibility for their own learning requires a similar paradigm shift, which can be distressing and intimidating (Felder & Brent, 1996; Nanney, 2004). Felder and Brent (1996) suggest that when students are involved in small group work, they often complain that other members of their group are not pulling their weight or that they are wasting time by explaining to slower learners. However, Felder and Brent believe that teachers who persevere through the adjustment period that comes with introducing a new and different learning method in their classrooms will reap the rewards of having students

“who learn more deeply and have better attitudes toward their subjects and themselves” (p. 46).

Studies in music education. Researchers have examined varying degrees of student-centered learning in music education and found this approach to be effective for student learning. I have included literature that examines the teachers’ perceptions of and degree of including student-directed instruction in their classrooms (Bazan, 2011), as well as several practitioner-based articles which make suggestions for music teachers to use student-centered learning in their classrooms (Blair, 2009; Brown, 2008). In addition, literature examining music students’ roles and processes (Scruggs, 2009; Tseng & Chen, 2010; Webb, 2012) is included. I also discuss studies of collaborative learning because several music education researchers and practitioners have examined the student-centered classroom using this particular term (Goldberg, 1990; Hoffman, 1991; Keil, 1987; Luce, 2001).

Examination of music teachers. Bazan (2011) described the teaching and learning strategies demonstrated by middle school band teachers who reported a student-directed teaching style as opposed to a teacher-directed teaching style. He used a mixed methods design with two stages of data collection. In stage one, he administered a questionnaire and Gumm’s Music Teaching Style Inventory (MTSI) (2004) to middle school band teachers ($n = 49$, 40.2% return rate). Gumm suggested that teacher-directed instruction (TDI) indicated “a teacher dependent active behavioral learning” environment (Gumm, 2004, as cited in Bazan, p. 26). Gumm described student-directed instruction (SDI) as a learning environment that prioritized “student-oriented reflective cognitive learning” (p. 26). Bazan analyzed the survey responses to determine participant teaching

styles. He also examined relationships and differences among MTSI scores and selected demographics such as gender, age, level of experience, level of schooling, school type (urban, suburban, or rural), and full- or part-time teachers. To provide a deeper perspective, in the second stage of his study, he observed and videotaped three of the most student-directed band teachers five times and conducted interviews. Some of the student-directed instruction techniques these teachers used included questioning, musical problem solving, and small ensemble/sectional rehearsals.

In stage one, Bazan found that even those teachers who reported prioritizing student-directed instruction (SDI) placed more emphasis on teacher-directed instruction (TDI) at a significant, moderate rate ($p < .01$, $r = .52$). Participants in stage two stated that they used SDI more often at other times of the year than those observed in this study, such as immediately following concerts. Bazan suggested that when teachers know they will have a classroom environment where their students will maintain good discipline and conduct, as well as effective means to conduct their own rehearsals, perhaps then teachers will be more willing to try alternative teaching approaches such as SDI. He stated that the priority placed on TDI in both stages of this study suggested that band teachers ultimately favored the teacher-directed approach. Bazan also recommended that SDI should be more prominent within large ensembles, as research has indicated it helps develop “student self-regulation skills, independence, creativity, and higher-order thinking” (p. 52). He suggested a more balanced approach to band rehearsal which could include both TDI and SDI strategies. Bazan’s model of student-directed instruction (e.g., questioning, musical problem solving, and small ensemble/sectional rehearsals) demonstrates that some forms of student-directed instruction can be firmly guided by the teacher. This is different from

student-led learning in the current study, which gave students much more control in the classroom as they worked in groups and alone to construct their own learning.

Examination of music students. Several practitioner-based articles make suggestions for music teachers to use student-centered learning in their classrooms via small group learning to provide learners opportunities for open-ended problem solving, critical and creative thinking, teamwork, and social interaction (Blair, 2009; Brown, 2003; Brown, 2008). Other research studies have examined student-centered learning methods looking at the students (Scruggs, 2009; Tseng & Chen, 2010; Webb, 2012).

Blair (2009) wrote a practitioner-based article describing student-centered learning within music education, explaining it from a thinking-and-doing standpoint: “when students own the doing and thinking—the informing of self musically—they are enabled to further their own musical understanding” (p. 44). The teacher’s role changes to shift the focus of classroom instruction from what the teacher will do to what the students will learn. The teacher is no longer the center of the musical experience, responsible for all of the thinking and decision-making. Rather, students are given musical problems to solve on their own or in a group and must think through and come to the answers themselves. The goal in student-centered learning should be “for students to be creative, imaginative, and independent musicians who are responsible for thinking and doing and musical decision making within a teacher-supported learning environment” (p. 45).

In a practitioner-based article, Julie K. Brown (2008) illustrated strategies teachers could use to incorporate student-centered learning and discussed the goals of student-centered learning methods. Brown traced student-centered learning to

constructivist theories of education proposed by Dewey and Vygotsky, defining it as a method in which students participate in the musical decisions that are made in the classroom. Students do not control the classroom, but the teacher asks questions, giving them a say in what they are learning and how they go about learning it.

Brown examined two musical models that incorporate student-centered learning: the Comprehensive Musicianship through Performance (CMP) model and the Arts PROPEL model. She referenced Patricia O'Toole's (2003) book, articulating that the CMP model gives students opportunities to learn about a traditional ensemble piece other than through performance alone. This model transforms the classroom into a whole-music learning environment that Brown asserted is student-centered—throughout the process, students and the teacher are making musical decisions together. The Arts PROPEL model, developed by Howard Gardner in 1984, is a process-based model in which students are assessed throughout the entire learning process. It is student-centered because students produce their own work, examine their work and others' work, and make connections between their work. Students also assess the effectiveness of the processes by which their work was created, the effectiveness of the work itself, and how their work or their process can be improved.

Brown stated that the ultimate goal of student-centered learning is for students to be independent—to find knowledge on their own, which will motivate them to strive for a deeper understanding of the material. This independence and motivation will also help them develop a stronger connection to and see immediate relevance for what they are studying. Ultimately Brown suggests that student-centered learning can help students

achieve musical understandings that will inform their decisions and value judgments about music—a skill they can use their entire lives.

Scruggs (2009) conducted a mixed-methods study examining how a learner-centered (L-C) instrumental music education classroom environment affected musical growth and independence as compared to a teacher-centered one (T-C). Participants in this study included all students in two orchestra classes at two different middle schools ($n = 155$ students), the teachers of the classes, and the researcher as participant observer.

At one school, orchestra teachers were allotted two classrooms. One teacher was trained to integrate L-C techniques in her eighth-grade classroom. The other teacher implemented T-C instruction in her classroom. The second school had only one orchestra room, and the teachers shared instruction. At this school, each instructor taught a portion of both the L-C and the T-C classes, and both were trained in L-C classroom practices. During the research study, one teacher took primary responsibility for the designated L-C class and one took primary responsibility in the T-C class. (p. 37)

Scruggs taught the learner-centered approach to the teachers through a professional development program during three one-hour time blocks at each school. Two of the teachers taught using a teacher-centered approach, and two taught using learner-centered approaches. The learner-centered methods were based on democratic principles of Woodford and Dewey, constructivist principles of Vygotsky, and research that investigated and described learner-centered classrooms. The first session was an introduction of the program discussing research about learner-centered techniques; Scruggs listed examples of “student composing, student improvisation, student conducting, peer tutoring, employing student written and verbal musical critique, soliciting and utilizing student input, and incorporating student leadership” (p. 46). The second and third sessions were learner-centered in practice. The teachers incorporated these strategies to “encourage active learning, student engagement, student-as- leader,

student choice, independent musicianship, and making use of each student's unique talents" (p. 37) within the class structure of their large ensembles. Data collection took place after the teacher training ended, from January, 2008 through May, 2008.

For quantitative measures, Scruggs used a Performance Assessment Instrument (PAI) and a Student Orchestra Environment Survey (SOES). She administered the PAI and the SOES once before the study, again in the middle, and at the end. Scruggs created a "Checklist for Learner-Centered Teaching Techniques" that each teacher filled out daily. The SOES asked students questions on a Likert-type scale about their views regarding the learner- and teacher-centered classroom techniques, depending on which class they were in. Scruggs scored items across participants to determine group means. PAI data indicated no significant differences in music performance outcomes between the learner-centered and teacher-centered classrooms. Scruggs concluded that "the integration of democratic and constructivist principles during this study did not appear to compromise students' ability to perform at or above expected levels" (p. 135). Qualitatively, she observed classrooms, conducted student and teacher interviews, and analyzed teacher journal entries. She found that those students in the learner-centered classrooms indicated positive perceptions of choice and had more leadership opportunities than students in the teacher-centered classrooms.

Webb (2012) explored the choices, thought processes, and evidence of knowledge construction of four high school string orchestra members in their role as peer tutors to younger string players in their orchestra program. He observed and video-recorded three 30-minute private lessons taught by each of the tutors, conducted initial and post-lesson

interviews, and had the peer tutors answer journal reflection questions following each lesson.

Webb found several themes among the cases. First, he found that peer tutors learned to re-explain a concept in ways that the students could understand and to model and give good verbal communication; and it became clear to him as a teacher that all of the communication that the peer tutors had to do clarified or reinforced the tutors' understanding of a musical concept. He also found that the peer tutors' prior learning experiences often influenced their pedagogical choices. The tutors would often teach as they were taught, use familiar repertoire in lessons (such as what they were working on in orchestra class), and use techniques that seemed to connect with them personally.

Another theme he found was that the peer tutors seemed to enjoy tutoring and valued the learning experience. The final theme was tutor perception of roles. Tutors did not see themselves as authoritative figures and expressed that the young students might feel less pressure in working with more like-aged peers than with the teacher (an authoritative figure). The last theme Webb identified was the tutors' "pedagogical comfort zone," which is "an area of teaching choices and procedures in which the peer tutor feels comfortable operating, and one from which they display a reluctance to stray" (p. 306).

This zone included "issues of pacing and repetition, unilateral instruction instead of questions, focus of attention, and their limited pedagogical knowledge" (p. 323). The tutors tended not to stray far from the few teaching methods that they felt comfortable using, such as repetition of a pattern; singular focus of attention, such as focusing their eyes on one particular place in the room or listening to only one thing over and over; having a limited "database," meaning that "their private instructors or former peer tutors

were an important source of their pedagogical knowledge, and much of this knowledge was in the form of specific teaching tools” (p. 315); using questions for their own pedagogical comfort rather than to elicit a reflective response from the students; and the desire to remain in a comfortable teaching zone.

Webb found that the “interest in teaching, and enjoyment of both music and teaching” (p. 253) may contribute to tutors having an increased motivational interest for learning. He also determined that these shared learning experiences between the tutor and the tutee might foster an increased sense of ownership in the music program and in the tutor’s own learning processes. Implications for music education included suggestions for preparation and guidance to help tutors with issues of pacing, communication and verbalization. Webb suggested that the teacher video peer tutors so they can reflect and assess their teaching. He also suggested that teachers could develop tutors’ expectations for and assessment of the learning of the tutee.

Tseng and Chen (2010) examined the effects of teacher-led versus learner-led instructional strategies in third- and fifth-grade elementary students’ music composition performance and their attitudes about the instructional strategies. Instructor-led instruction was considered as transmission of knowledge and focus on content. Learner-led instruction focused on active learning and students being “engaged and involved in what they were learning” (p. 19), though in Tseng and Chen’s study, students did not work in groups.

Tseng and Chen used *Hyperscore*, a computer-based music composing tool developed by a team of MIT media students, as the composition medium. Third-and fifth-grade students participated in an experimental learning activity using the 5E learning

cycle as a pedagogical framework. The 5E learning cycle model, first developed for application in science education, is based on the principle that knowledge is constructed by experiences that follow five stages:

- a) Engagement—learning goals and illustrations of *Hyperscore* music; b) Exploration—practice with the use of *Hyperscore* and create rhythm and melody; c) Explanation—explain the creation of rhythm and melody; d) Elaboration—music composition; e) Evaluation—assess music knowledge, computer skills and composing ability. (p. 22)

Tseng and Chen adapted this model for music education “since many studies related to music composition and creativity showed that exploration is very crucial during [the] composing process” (p. 19). The study lasted a total of 80 minutes; the authors did not specify how the stages were divided or if the study was conducted in one 80-minute period. At the end of the treatment, students answered a questionnaire about their attitudes toward the learning activity, including extrinsic motivation, perceived easiness and perceived usefulness of the music composing software.

Three experts in the field evaluated participants’ final compositions using a rubric with three aspects: aesthetic appeal, creativity and craftsmanship. The aesthetic appeal scale measured general impression to determine whether listeners would find the composition interesting and enjoyable. The creativity scale considered originality, unusualness or imaginative musical ideas, and whether students included at least two musical elements. The craftsmanship scale assessed whether students presented at least one complete musical idea, created a coherent and organized form with a beginning, middle, and end, and used musical elements to organize either musical ideas or form.

Results showed that learners performed well on all three aspects in regards to both instructional strategies. Learners with instructor-led strategies significantly outperformed

learners using learner-led strategies in creativity and craftsmanship. This finding contradicted the researchers' assumption that learner-led instruction would lead students to perform better. Tseng and Chen suggested a reason for this could be that learners receiving learner-led strategies need "more time [than one 80-minute period] to explore music and software in order to enhance learners' music composition performance" (p. 27). They also found that learners with instructor-led strategies held higher extrinsic motivation than learners using learner-led strategies because learners in the learner-led classroom needed to possess higher intrinsic motivation in order to "learn well" (p. 27). This is contrary to others' findings that students engaged in student-centered or learner-led activities were intrinsically motivated to do musical activities without adult interference (Allsup, 2002; Davis, 2008; Felder & Brent, 1996; Green, 2001, 2008; Jaffurs, 2004). Perhaps this result was different because Tseng and Chen conducted the study with a population of students in Taiwan, whereas all other studies that found that students were more motivated by this type of student-centered instruction were conducted in Western countries such as the U.S. and in Europe. Also, the short duration of Tseng and Chen's study may have made a difference.

A third group of studies related to student-centered learning examined collaborative learning (Goldberg, 1990; Hoffman, 1991; Keil, 1987; Luce, 2001). Goldberg (1990) wrote a practitioner-based article in which she explored the benefits of teaching-research as collaborative learning. She seemed to define teaching-research as the incorporation of "students' thoughts and ideas into [teachers'] lessons" (p. 38). The focus of her article was to help teachers to "engage the learners, incorporate their voices into the classroom, studio, and curriculum, and to develop a supportive atmosphere" (p.

38). She provided examples of brief case studies from her own private piano lessons where she included her students' thoughts into her teaching of their lessons. Goldberg recorded and transcribed these lessons to illustrate how teaching-research can apply to music lessons. She discussed collaborative learning as being between the student and the teacher, focusing on the idea that "students are actively engaged in constructing their own musical frameworks" (p. 41). She concluded that teaching-research allows teachers to work more collaboratively with students, giving students more input and direction in their own learning, while the teacher is able to understand the student better and therefore respond in a way that is more helpful to the student.

Hoffman (1991), a university theory professor who taught a traditional music harmony course, conducted an informal experiment. Because "the activities of musicians lack relevance to society," he sought to find a "solution to the separation of musical roles by adapting a standard harmony course to a computer-aided collaborative learning format" (p. 270). Hoffman's prior method of evaluating students was to have them harmonize melody or bass lines of musical phrases by writing them out on paper and submitting to the instructor during class, but students were not hearing what they wrote. With use of Deluxe Music Construction Set software in the Computer Studio class, students were able to hear the chords they composed as they entered their assignments into the computer. Students worked in groups of three at each computer, taking turns inputting the chords. All student groups discussed each answer before submitting the exercise to Hoffman, who would come listen to the particular exercise in person and ask for students' comments.

Based on the way he saw students working together and the amount of input and feedback he provided them, Hoffman concluded that “discussion within groups, the instructor’s assistance, and the capacity for immediate evaluation of results all serve to help each student develop skills for managing harmony more effectively than do customary teaching methods” (p. 278). The role of the instructor, he said, was to act as a guide to provide directions, mediate disputes, and evaluate student work, but his role in their learning was “less remote and less dominant than that of the traditional lecturer” (p. 276). Hoffman also used a questionnaire at the end of the class to ask students about their attitudes toward the class. He reported that 100% of the respondents said they would prefer the Computer Studio class time over the traditional method of instruction.

Luce (2001) reviewed literature about collaborative learning in general education as well as music education, looking specifically at the changing paradigm of educational processes regarding “basic foundations of inquiry,” from “traditional techniques that have viewed educational processes in isolation to more inclusive studies that explore the various contexts in which educational processes occur” (p. 20). Although he did not offer a concise definition, he stated that collaborative learning is “an ‘umbrella’ term that includes a variety of approaches of cooperation and collaboration, or as a broad approach that emerges from the interactions between a teacher and his or her students” (pp. 20-21). He included peer-to-peer learning within the term as well noting, “students bring a storehouse of knowledge and experience to any school environment” (p. 21).

Luce found that collaborative learning “has been noticeably absent within the field of music education” (p. 20). He found only three articles that discussed collaborative learning in music, including Goldberg (1990) and Hoffman (1991). He also

briefly examined Keil (1987, as cited in Luce, 2001, p. 24), who suggested that collaborative learning as “just another name for our prime species being in the process of creating genuine culture.” Luce concluded that, because music is an inherently collaborative medium, collaborative learning among knowledgeable peers and teachers allows music to come alive.

Luce determined that “theory, musicology, applied instruction, ensemble performance, and music teacher education all offer inherent opportunities to engage students in collaborative processes” (p. 24). He concluded,

Adopting a collaborative learning approach places renewed responsibility on students to participate, on professors to share the authority of knowledge, and on the combined efforts of a community of knowledgeable peers to maintain the integrity and vitality of music. (p. 24)

Luce recommended that, because so little research has been done in music education, perhaps teachers in the field are not incorporating collaborative learning into their classrooms, creating a lack of an appropriate venue to do research. He purported a need for professional development to introduce the philosophy, methodology, and support mechanisms for teachers to include collaborative learning in their music classrooms. Finally, Luce put forth that inclusion of collaborative learning in music education could “increase social capital, expand spheres of influence, develop bands of commonality and community, and have some fun in the process” (p. 24).

Summary: Student-centered learning. I have examined literature for student-centered learning in general education and within music education. Based on the findings and discussion of these studies and articles, student-centered learning is largely based within constructivist learning theory; however, the teacher’s input and instruction can vary. Studies of student-centered learning, focused on the teacher’s role, student learning,

and collaborative learning, informed my study. The current study is set within a student-centered classroom, more specifically called a student-led classroom where, as put forth in Chapter 1, students are largely in charge of their learning and the teacher's role is more reactive rather than proactive. Students are responsible for thinking and doing and making musical decisions, but, as Blair (2009) noted, "within a teacher-supported learning environment" (p. 45).

Alternative Approaches in Instrumental Music Education

Alternative approaches for instrumental music education have been important topics at recent national and international music educator conferences. At the 2013 Instrumental Music Teacher Educators Colloquium, 7 of the 39 poster sessions were dedicated to research on new and different approaches for the secondary instrumental classroom. The 2013 Society for Music Teacher Education Symposium also included six presentations that focused on alternative paradigms for K-12 music education or for music teacher education programs. This recent focus on researching alternative paradigms within instrumental music education may mean that, as Kratus (2007) noted, music education is at a tipping point. Kratus further stated that continued investigations into alternative paradigms are needed to normalize them and to open the door for major changes that need to occur in music education. In this section, I will discuss three alternative approaches pertinent to my study: comprehensive musicianship (Benner, 1972; Garofalo, 1983; O'Toole, 2003; Pogonowski, 2001; Sindberg, 2012), democratic action (Allsup, 2002, 2003; Jaffurs, 2004), and small ensembles (Larson, 2010; Carmody, 1998; Cary, 1981; Olson, 1975; Sherburn, 1984; Sorensen, 1971; Stabley, 2000; Zorn, 1969). My study builds on this prior research by asking students to work in small groups,

to be more involved in the entire learning process, and to have more autonomy in their learning.

Comprehensive musicianship. Comprehensive musicianship, broadly defined, encompasses the idea that students in music classes should engage with music in more ways than just performance of large ensemble music. Austin (1998) pointed out that “the nine content standards included in the national standards are listed alongside curricular objectives associated with established comprehensive musicianship models” (p. 25) and stated that “it is difficult to argue against teaching toward most if not all of the music content standards within ensemble classes” (p. 30). The Manhattanville Music Curriculum Project (MMCP) was one approach to comprehensive musicianship begun in the 1960s (Pogonowski, 2001). During this time of momentous change in school reform, civil rights, and technology, music educators aimed to define a relevant and dynamic role for music education within this new society. Planning for the MMCP took place in July of 1966 at Manhattanville College in Purchase, New York. Pogonowski was among the musician-educators that comprised the committee – “composers, musicologists, philosophers, college professors, and elementary, middle, and high school teachers” (p. 25). Specifically, the goal of the MMCP was to “explore how music education might be improved in primary and secondary schools” (p. 25). More specifically, the committee wanted to 1) unfold methods for students to engage with music that were broader than simply skill-building and 2) create a curriculum framework that would encompass traditional musics as well as include ever-new musics important to the societies that create them.

The MMCP was based on Bruner's spiral curriculum, which states, "any subject could be taught in some intellectually honest form at any stage of development" (as quoted in Pogonowski, 2001, p. 25). Pogonowski wrote that the MMCP was based on five musical elements of timbre, dynamics, pitch, duration, and form. It also argued for a "different ambiance for students and teachers working together in classrooms, an ambiance most teachers were not prepared to deal with" (p. 25) in which students were engaged in "behaviors distinctly associated with musicians" (p. 25) such as composing, improvising, interpreting, performing, analyzing, conducting, and listening with critical awareness. She stated that this type of environment would necessarily feel, look, and sound different than a traditional large ensemble rehearsal. It embraced the idea of students' interaction with their musical environment and "continuity of experience" (p. 25), in that students should be able to draw from previous musical experiences. The MMCP emphasized critical thinking, constructivism, creativity, and the ability to conceive phenomena through musical expression as a premise of their curricular framework.

The members of the MMCP produced two documents: *MMCP Synthesis* and *MMCP Interaction*. Pogonowski suggested that these documents be viewed, not as a teaching methodology, but as "constructivist guidelines for engaging students in the substance and methods for making music" (p. 27). Pogonowski pointed out that the members of the committee sought for students to be able to create, perform, listen, analyze, and evaluate music, much in the same manner that the National Standards for music education sought to do in 1994, noting that "a retrospective look at the MMCP

reveals that its initiatives are as clearly consistent with current curriculum theory as they were innovative in the sixties” (p. 27).

Several researchers and practitioners have suggested ideas for comprehensive musicianship in the ensemble classroom. One alternative approach is the Comprehensive Musicianship through Performance (CMP) Project (“Wisconsin CMP,” n.d.), initiated in Wisconsin as a formal program in 1977. The goal of the Wisconsin CMP is to assist teachers of traditional performing ensembles (band, orchestra, and choir) in rehearsals “enrich[ing] the performing experience with additional kinds of musical understanding” (Benner, 1972). Teaching strategies developed through CMP bring together quality performance and meaningful learning simultaneously. Rehearsals are viewed as

[laboratories] where students can develop an understanding of musical concepts such as expression, melody, rhythm, harmony, texture, timbre and form by being involved in a variety of roles including performing, improvising, arranging, composing, conducting, and analyzing music.
(<http://www.wmea.com/CMP/about/index.html>, n.d.)

Sindberg (2006, 2012) described the Wisconsin curricular model initiative, *Comprehensive Musicianship Through Performance (CMP)*, as having “emerged from the belief that performing groups, not general music, constitute the foundation of the school music program in most middle and high schools” (2006, p. 63). For that reason, and in these performance ensemble settings, the development of deeper and meaningful musical understandings becomes a curricular goal. The Wisconsin CMP grew out of a meeting in 1977 of a group of music educators whose goal was “to examine music teaching and learning in performing ensembles” with the goal of “broadening the musical experience for students in band, choir, and orchestra” (p. 61). In the meeting the music educators examined other four initiatives which were particularly important in shaping

and progressing their Wisconsin CMP approach: the Contemporary Music Project, the Manhattanville Music Curriculum Program, Yale Seminar, and Tanglewood Symposium.

The CMP model has five equally important parts for teachers: selection, analysis, outcomes, strategies, and assessment. The teacher plans learning outcomes based on assessment of student needs and prior knowledge. Student learning of musical elements is assessed throughout the process of learning, with the final performance being one outcome. Analysis of multiple outcomes throughout the curriculum helps teachers identify deficient musical elements before the end so that students have time to work on and master them in order to develop a comprehensive musical understanding.

Additionally, CMP recommends that teachers choose quality repertoire and focus on the larger goal of group performance. The quality of literature is important to CMP, as it “has an important impact on the aesthetic responses experienced by students,” however, the introduction to the Wisconsin CMP additionally points out that “‘high quality’ music literature does not guarantee a higher level of musical understanding”

(www.wmea.com/proxy.php?filename=files/CMP/CMP_background_Aug_2010.pdf)

The importance of larger goal of performance within an individual teacher’s curriculum should be noted, as it is called “performance with understanding”

(www.wmea.com/proxy.php?filename=files/CMP/CMP_background_Aug_2010.pdf)

within a traditional large ensemble.

Three published examples describe applications of comprehensive musicianship in the ensemble classroom, focusing on the notion of engaging students with the music they are performing in multiple ways. Patricia O’Toole’s (2003) book, *Shaping Sound Musicians*, is a collection of teaching ideas from band, choir, and orchestra master

teachers in Wisconsin. It offers traditional large ensemble teachers classroom-tested ideas that they can use to help students learn “to perform with a meaningful understanding of musical concepts and aesthetic awareness, which is the goal of CMP” (p. x).

Garofalo (1983) also provides a curriculum guide for band teachers based on a broad approach to comprehensive musicianship that incorporates music history and theory into classroom projects in the band room and band rehearsal procedures. Noting that the concert band’s “rich potential for teaching about music beyond performance skills remains relatively undeveloped” (p. ii), his book provides suggestions to help band teachers incorporate “the teaching of musical concepts and skills through performance repertoire” (p. ii). Through improvising, arranging, composing, conducting, and analyzing (Wisconsin CMP and O’Toole) or through deeper investigations into music history and theory (Garofalo), comprehensive musicianship is an approach to teaching music that lends itself to a student-centered learning environment.

Sindberg’s practitioner-based book (2012) provides practical ways for ensemble leaders to incorporate comprehensive musicianship into their classrooms. Her premise for writing the book was based on the notion that “teachers in school music ensembles (band, choir, orchestra) plan instruction that will lead to student learning – learning most often focused on technical skill development” (p. xi). Sindberg provided a brief overview of the evolution of the Contemporary Music through Performance (CMP) initiative. Seeking to utilize a “broader musical experience in the ensemble setting,” Sindberg used data, narratives, and anecdotes from her research to promote the Wisconsin CMP model in order to get students engaged in music “beyond technical proficiencies toward a broader body of knowledge and understanding” (p. xi).

Democratic education. Another area of interest in creating new instrumental music paradigms is democratic education. John Dewey (1938/1997) affirmed that “democratic social arrangements promote a better quality of human experience, one which is more widely accessible and enjoyed, than do non-democratic and anti-democratic forms of social life” (p. 34). Drawing upon the democratic teaching principles of Dewey, Allsup (2002, 2003) conducted an ethnographic study of how mutual learning and democratic ideas can be applied in a high school instrumental music classroom. Allsup (2002, 2003) studied nine students who volunteered to be part of an after-school program. The students participated in 11 sessions that lasted approximately 2.5 hours after school over a four-month period. Allsup sought to have small student groups create music “in the form of mutual learning communities” (2003, p. 25). In setting up the project, he emphasized its collaborative nature, explaining, “project participants would be asked to create music of any genre using their band instrument, any available percussion equipment, or an instrument from home” (p. 29). He also expected participants to share in the design of the study, which included voting on procedures, establishing rules and protocols, and assisting him in the data analysis. Allsup told students he was interested in their compositional process and was not assessing artistic production, aptitude, or attitude.

The students split into two groups of their choosing. Group 1 chose to take on a garage band format, working collaboratively together throughout the program to create a rock song. They “adopted the traditions of popular music making” and their music evolved “mainly through sound or music making” (2003, p. 30). Group 2 first created a classical-type piece of music, writing down their ideas using traditional notation. They

encountered problems because initially they chose to work separately and individually, coming together at the end of the composing process to try to fit things together, which hindered evolution of the piece. Later in the project, this group chose to compose a jazz-style piece. Working in this genre was less problematic – they worked more collectively, according to one of their members, who also said that working with the jazz medium was “kinda like an evolution” (Allsup, 2003, p. 32).

Allsup (2002, 2003) concluded that the mixture of methods he used—a mix of garage band and band room, teacher and student, popular music and classical traditions—formed “a new hybrid” (p. 33) style of teaching. One of the advantages most mentioned by the group members in both groups during interviews was that of cooperative or peer learning. He also observed that peer learning had less to do with the “transmission of skills and more to do with the process of discovery” (p. 33). The changing role of the teacher was also noteworthy. Allsup explained that one student noted how Allsup as the teacher “became a friend, a coach, a peer, a teacher” (p. 35). Allsup concluded that it was a “challenge to [the student’s] earlier conceptions of pedagogy, an understanding of teaching based on hierarchy and oppression” (p. 35). Like researchers who had studied the informal learning methods of rock musicians (Campbell, 1995; Davis, 2005), he found that students seemed to have success when they combined the processes of rehearsal and composition. Allsup’s overall conclusion was that, when students are “given space to explore freely, to work democratically, they will create a context about which they are familiar, conversant, or curious” (p. 35). These ideas “unveiled possibilities for a reconceptualization of instrumental music education in school” (2003, p. 29).

Jaffurs' (2004) ethnographic study with a developing student garage band identified democratic action as a major concept utilized by the elementary-aged garage band members she observed.

The band members said that there was no leader of the group and that they all composed the music together. The democratic actions of the band were apparent. Together, they chose where they rehearsed, the style of music they wanted to play, the instruments they wanted to play, and the length of the rehearsals. There was a feeling that they were all in this together and that they all contributed in some way or another to the creation of the music they composed and performed. (p. 197)

She noted that there was also a discernable leader who gave directions and answered members' questions throughout most of the rehearsal. Group members did not acknowledge him as a teacher, but as an "on-site transmitter" (Campbell, as cited in Jaffurs, 2004, p. 195). Ultimately, Jaffurs was impressed that the students "collaborated and worked toward a common goal that they had a vested interest in" (p. 198). In order to model that type of collaboration in her own classroom with high school students, Jaffurs asked her students questions about how they perceived her teaching and in what direction they wanted to go. She allowed more flexibility in her lesson plans and became open to new possibilities in the classroom, giving the students input on musical objectives to be learned.

Small ensembles in the large ensemble setting. Several studies examined the effects of chamber music experience on student achievement and attitudes (Berg, 1997; Carmody, 1998; Cary, 1981; Larson, 2010; Olson, 1975; Sherburn, 1984; Sorensen, 1971; Stabley, 2000; Zorn, 1969). I have included summaries of these studies because they focus on the potential for student-leadership in small chamber groups, very similar to my study.

Berg (1997) addressed questions about patterns of musical thoughts and actions and how students assisted their peers through Vygotsky's zone of proximal development in chamber ensemble rehearsals. The purpose of Berg's study was to describe how high school chamber music students made decisions and arrived at conclusions about their interpretations through their interactions in the rehearsal setting. Students in two small ensembles (a horn trio and a string quartet) served as participants for this ethnographic study. The ensemble members were observed, video- and audio-recorded, interviewed, and provided artifacts and other materials over a five-month period. Berg observed the ensemble members' focus on musical elements, their rehearsal priorities, and several categories of verbal and non-verbal activity during the rehearsals. With regards to Vygotsky's ZPD, Berg discussed how the students "challenged each other to work at a higher or proximal level of development" (p. 235) during the rehearsals, and noted that the students tended to work at a higher level of development when working as a group. Coaching, scaffolding, and fading were mentioned as three strategies of "cognitive apprenticeship." Berg, lamenting that most Vygotskyian research has taken place in adult-child teaching and learning situations, asked if the scaffolding process might also be explored between peers of more similar age and ability levels.

Larson (2010) conducted a quantitative study examining the effects of chamber music experience on high school band students' performance achievement, motivation, and attitudes toward music. She looked at the additional independent variables of sex and high and low musical achievement. Using a pre- and posttest design, she assigned treatment group members to chamber ensembles of two to four students who worked independently, while the control group participated in a large teacher-led ensemble.

Seventeen treatment sessions occurred over fourteen weeks during class time. Larson found significant differences in attitudes toward music favoring the treatment group and the low musical achievement group in the treatment group. These results indicated that students in the student-led chamber groups, especially lower musical achievers, had an overall more positive attitude toward music than students in the teacher-led large ensemble. Larson suggested that chamber music experience may also “promote improvement in performance skills, and change students’ motivation attributions for success and failure in music” (p. iii).

Stabley (2000) investigated the effects of involvement in chamber music on the intonation and attitudes of sixth- and seventh-grade string orchestra players in a 39-week study. He utilized three orchestra classes – two sixth-grade and one seventh-grade. One sixth-grade class received only large ensemble experience; the other received large and small ensemble experiences; and the seventh-grade class was divided into two groups in which one group received large ensemble experience and the other received both large and small ensemble experiences. Significant difference in intonation was found in favor of the experimental (small and large ensemble) group, and significant difference was found between treatment (large and small ensemble experience) and control groups (large ensemble only) in attitudes in the seventh-grade group only. Stabley’s results indicate that participation in small ensembles may have a positive effect on intonation and students’ attitudes.

Carmody (1998) studied the effects of chamber music experience on performance intonation and attitudes toward music among junior high school string students in southern California using a pretest-posttest design over a 14-week period. The control

group participated in large ensemble classes and the treatment group participated in both small chamber ensembles and large ensemble classes. No significant differences were found in attitudes but the treatment group made greater gains in intonation scores than the control group.

Sherburn (1984) studied student achievement and attitudes in high school instrumental music education by comparing the effects of a lab approach to traditional large ensemble instruction. He used a quasi-experimental pretest and posttest design, studying 137 students in two high schools. For 36 weeks directors at each school conducted all testing and rehearsals. The treatment group had lab class during the school day five days a week for one period each day where they engaged in activities including chamber music experience, study of a second instrument, composition, conducting, music theory, music literature and history, arranging, piano, and guitar. They also played in a large ensemble before school without class credit. Control group students participated in two large ensembles during the school day five days a week for two periods with credit. Results indicated no significant changes in attitudes toward music between groups but a significant difference in musical achievement favoring the treatment group.

Olson's (1975) study compared the effectiveness of wind chamber music ensemble experiences with wind large ensemble experience in terms of promoting cognitive music achievement, music performance achievement, and change in attitudes toward music among wind players. The treatment group participated in small student-led chamber ensembles once a week and full band twice a week while the control group participated in full band three times a week over 16 weeks. Statistical significance in favor of the treatment group supported the hypothesis that students learn music

performance skills and notation more effectively and rapidly when they have small chamber ensemble experiences than when they do not. When Olson compared motivated students to non-motivated students, he determined that small ensemble experience enhanced music performance in motivated students and overcame a lack of motivation in the less motivated students but that large ensemble performance appears to “limit the music performance achievement of motivated students, particularly the better players” (p. 65).

Sorensen (1971) studied the effects of small ensemble experience on performance achievement and attitudes in junior high instrumental students from three schools over a 16-week period. Areas of achievement he investigated included sight-reading, intonation skills, and attitudes toward music. The band directors selected students from the large ensembles to be members of chamber groups to form standard instrumentation and to ensure as equal performance levels as possible among the students in each ensemble. The chamber groups met once a week for a 30-minute rehearsal session in which they worked on small ensemble literature. The students who stayed in the large ensemble worked out of an ensemble drill method series. Results indicated a significant difference in achievement favoring the treatment group but no significant differences in attitudes toward music between groups. It is unclear whether or not the band teacher coached the chamber groups or not, and if so, who was running the control group, as the treatment groups met during regular class time. The treatment groups seemed to have a large amount of director input, perhaps even instruction. Perhaps this is why student attitudes were not significantly different between groups. Sorensen concluded that perhaps playing in large ensembles develops musical dependence rather than independence.

Zorn (1969) studied the effectiveness of chamber ensemble experience on performance ability, cognitive learning, and change in attitudes for ninth-grade band students over a 32-week time period using a quasi-experimental pretest-posttest design. The treatment group received one 50-minute chamber session per week while the control group participated in sectional rehearsals, and all groups participated in large ensemble three times per week. Zorn found no significant differences in achievement between groups, though the treatment group showed greater gains in achievement. The treatment group had significant changes in positive attitudes toward music. These results indicated that small group instruction may have a positive impact on student attitude and does not diminish their achievement.

Summary: Alternative approaches. I have examined literature looking at comprehensive musicianship, democratic education, and small ensembles in the large ensemble setting. Overall, these studies' findings of alternative approaches in the ensemble classroom indicate that student achievement in small groups was higher than student achievement in large groups. In most of these studies, comparison between student-led and teacher-led small group experiences indicated that when the director was more heavily involved, students had less of a positive change in attitude than when the director was less involved and students had more autonomy. Though I did not use this information in initially designing my study, the consistency of these findings supports my study's design of student-led small group work.

Aural Learning

Best practices literature and research studies have found that aural learning is an effective and important skill for learning music (Davis, 2008; Gordon, 1993, 2003;

Green, 2001, 2008; McPherson, 1993, 1995; Musco, 2010; Schleuter, 1997). These methods and studies refer to aural learning by different terms including aural learning, aural copying, audiation, playing by ear, and listening and copying, all which encompass the notion of learning pre-existing music aurally without the aid of notation (Musco, 2010).

These research studies and practitioner articles on aural learning informed my understanding of how both formally and informally trained musicians go about developing aural skills and learning music by ear. One of Green's (2008) major tenets of informal music learning is that "the main method of skill-acquisition in the informal realm involves copying recordings by ear" (p. 9). Would the students in my study emulate the aural learning processes or utilize the suggested methods put forth from this literature as best practices or effective methods in order to learn their songs? Or would these formally-trained students go about aurally learning music differently than some of the suggested methods? These studies gave me a basis for understanding what to look for in my study participants' habits. They also provided a justification for a study about aural learning methods, such as this one.

Research Studies

Edwin Gordon (1979, 1989, 1993, 2003) developed his Music Learning Theory, based on the thought that children learn music similar to the way they learn language; i.e., by imitating, then speaking, then reading. They start with "musical babble" and move to more complex understandings through the process of audiation. His complex theory also discusses other aspects of how students best learn music.

Gordon's music-learning sequence is based on the belief that students should imitate familiar music first. It includes two types of learning: discrimination and inference learning. Discrimination (perceptual) learning includes five levels, which help students internalize familiar musical patterns:

- Aural/oral
- Verbal Association
- Partial Synthesis
- Symbolic Association
- Composite Synthesis (Gordon, 1993, p. 55)

Aural/oral and verbal association are used to help students develop familiarity with patterns, then the other three levels can occur with familiar music. From there, students can move into the three levels Gordon called inference learning (conceptual), which concern the transfer and manipulation of unfamiliar musical patterns and can occur with familiar music:

- Generalization
- Creativity/improvisation
- Theoretical understanding (Gordon, 1993, p. 55)

Gordon stated that these three levels should be applied to unfamiliar and unknown music and can only happen after a student has mastered the five levels of discrimination learning with a given musical concept.

Gordon's concept of audiation directly relates to how students in my study learned. Gordon used the term audiation to describe what "takes place when one hears music through recall or creativity, the sound not being physically present except when one is engaging in performance, and derives musical meaning" (1979, p. 43).

Because his Music Learning Theory is based on learning aurally at first, Gordon (1979) identified eight types of audiation and six stages of audiation. The eight types are

not hierarchical, in that they do not necessarily progress from one type to another. They are:

Type 1	Listening to familiar or unfamiliar music
Type 2	Reading familiar or unfamiliar music
Type 3	Writing familiar or unfamiliar music from dictation
Type 4	Recalling and performing familiar music from memory
Type 5	Recalling and writing familiar music from memory
Type 6	Creating and improvising unfamiliar music
Type 7	Creating and improvising unfamiliar music while reading
Type 8	Creating and improvising unfamiliar music while writing (Gordon, 2003, p. 14)

The stages of audiation are hierarchical in that students must master one stage before being able to moving on to the next. As they occur in Type 1 audiation, the stages are:

Stage 1	Momentary retention
Stage 2	Initiating and audiating tonal patterns and rhythm patterns AND recognizing and identifying a tonal center and macrobeats
Stage 3	Establishing objective or subjective tonality and meter
Stage 4	Consciously retaining in audiation tonal patterns and rhythm patterns that have been organized
Stage 5	Consciously recalling patterns organized and audiated in other pieces of music
Stage 6	Conscious prediction of patterns (Gordon, 2003, p. 18)

McPherson (1993, 1995) identified five essential performance skills needed to successfully play a musical instrument: playing by ear, sight-reading, playing from memory, performing rehearsed music proficiently, and improvising. He defined playing by ear as “the ability to reproduce aurally on a musical instrument an existing passage or piece of music which has been learned using an aural orientation” (1993, pp. 14-15). He developed a theoretical model to describe a “balanced” approach to instrumental training and to clarify the relationship between the five essential musical performance skills:

1. Sight-reading
2. Performing rehearsed music
3. Playing from memory
4. Playing by ear

5. Improvising

The assumption of his theoretical model was that “an ability to perform rehearsed music proficiently and improvise will be influenced by the capacity of an instrumentalist to perform music by sight-reading, from memory and by ear” (1993, p. xiv). From this model he implemented a research program to quantitatively address questions about the relationship between these performance skills. McPherson sampled 101 high school clarinet and trumpet players who were preparing for an Australian Music Examinations Board (AMEB). For the study, students were divided into two levels of age and ability:

Group 1 consisted of students in high school years 7 to 9 (ages 12 to 15) undertaking the “upper beginning” level of the AMEB syllabus (i.e., AMEB Grades 3 and 4). Group 2 consisted of students in school years 10 to 12 (ages 15 to 18) completing the “lower developing” level of the AMEB syllabus (i.e., AMEB Grades 5 and 6). (1995, p. 145)

McPherson administered three tests and compared them between the older and younger groups: the Test of Ability to Play from Memory (TAPFM), the Test of Ability to Play by Ear (TAPE), and the Test of Ability to Improvise (TAI). The TAPE is the test of most interest to my study because it specifically investigated students’ ability to play by ear. This test included familiar and unfamiliar melodies that students would learn to play by ear and then transpose aurally. Scores for the younger students (Group 1) ranged from 41% to 98%. The older students (Group 2) scored between 68% and 81%; this group scored significantly higher on average ($F_{1,99} = 47.07, p < .00005$) (1995, p. 152).

Along with giving the tests, McPherson administered a questionnaire to the participants in which he asked them questions to “obtain information on 16 variables believed to influence the development of” the skills on which they were being tested. The older students reported that they played more often by ear than the younger group. For

both groups, frequency of playing by ear was significantly correlated with scores on the aural playing test. For the overall study sample, which included all students in grades 7-12, McPherson found a significant correlation ($r = .67$) between ability to play by ear and ability to sight-read, with that relationship strengthening over time. Based on the findings from his study, McPherson concluded that

. . . students exposed to a traditional, visually oriented approach to learning a musical instrument are typically inefficient in their ability to audiate music from notation or aurally. These results show the extent to which a visually oriented system of training fails to develop the important capacity to “think in sound,” which is essential to all musical performance. (1993, p. 327)

McPherson concluded that all five performance skills are essential for a balanced approach to teaching instrumental music and overall musicianship. He stated that further research using his model and alternative models is needed to confirm and cross-validate the relationships he proposed.

Lilliestam's (1996) article in *Popular Music* summarized some of the most important ideas of his book, *Playing by Ear: Blues, Rock and Oral Transmission* (1995), in which he reports on a three-year research project for the School of Music and Musicology in Göteborg, Sweden. The aim of the book was to “present existing research on playing by ear and to analyze how playing by ear really works” (p. 195). His article highlighted some of the findings from his book and points to the need for further research in the area of playing by ear. Lilliestam interviewed rock and blues musicians about how they learn and think about music. He discussed these major concepts: orality and literacy; tacit knowledge; musicians' terminology and vocabulary; remembering music; formulas; learning to play; composing and rehearsing; and building on tradition. In conclusion, he was surprised by the fact that “there is so little research on playing by ear and oral

transmission, that knowledge of this is so superficial, and that musical practice has been so little observed,” and noted that “there is a great need of further research” in this area of music (p. 213). Specifically he listed a need for research on “how songs are made, how people learn to play an instrument, how songs are taught and learned, how musicians think of and theorise on their music – in different types of music played by ear” (p. 213).

Similar to Lilliestam, Green (2001) sought to answer questions about how popular musicians learn. For her study, aural learning was central to how the popular musicians developed skills and knowledge. Her suggestions to help students improve their aural skills included developing the ear through real life aural copying, not formal music tests; and using the keyboard to let students learn theory aurally first, incorporating formal notation later. She later included aural learning in the methodology of her 2008 study.

In the first chapter of her dissertation, Davis (2008) noted that the skill of aural learning was largely absent from the traditional large ensemble classroom, pointing out that most band method books focus primarily on reading notation from the beginning and do not emphasize aural learning. She explained how she used aural learning for her fifth-grade beginners to learn the chorus for the song, “Final Count Down,” in band class. She began the process of aurally learning “Final Count Down” herself by playing the melody on the piano along with the CD and then notating the melodic line. She noted that it involved several listenings for her to do it, and she realized that it would take multiple listenings for her students as well.

She planned a problem solving lesson using class discussion, questioning techniques, guided listening, and scaffolding techniques to aid in the aural learning process. She began to teach the song to her students by playing it for them repeatedly on

a piano, then she allowed students to have time to work on their own, at their own pace. After playing the melody of the chorus a few times on the piano for the students (number of times was not specified), Davis realized students were already familiar with the chorus but not the verses. Students began to sing the melody of the chorus to themselves, then figure out the first notes on their instruments. She let them work independently but noticed that most students worked in small groups in order to resolve how to play the melody.

Davis found that the students needed to go from small groups and independent work to large group work where they engaged in “listening, singing, student performance of the work in progress, followed by short strategies for ‘getting the notes’” (pp. 22-23), and then back to independent or small group work. Most students had trouble identifying melodic skips. To resolve the problem, they played scale-wise passages until they found the correct note. At the end of class, many students were recognizably playing the melody of the chorus, however, not all of the students had deciphered it, and Davis encouraged them to practice at home. She noted, "we were not quite at solid ground, but one foot was almost reaching and I was fairly certain we would be able to play the entire tune [for the upcoming concert that was just a few weeks away]" (p. 26).

A week later at the next class meeting, Davis asked the students how they went about learning the song outside of class: some had written down notes from other students, others had experimented until they found the right pitches. More importantly, she discerned that students were being more proactive in their learning and "were looking for the answers in the resources they had at their disposal. They were also discussing the project amongst themselves outside the band classroom" (p. 26). One student, Burt, who

initially asked to learn the “Final Count Down,” worked at home and was able to play the melody in class the next week, though he had learned it in B-flat, a different key than the one they listen to in class. Burt later began to learn “Kum Ba Yah” by ear even though it was in his band book, to which Davis affirmed, “I found it interesting that he had been working intensely in the aural mode and [that] he stayed in that mode even though this song was notated in our method book” (p. 20). She mentioned that most students had done a lot of work outside of class, and from there they were ready to learn the rhythmic notation, though they did not need it because they had resolved how to play it by ear. Davis reported that they were able to play the piece on the spring concert, one of the highlights of her teaching at that school.

Stringham (2010) pointed out that instrumental pedagogy largely prioritizes performance via musical notation, which “often neglects essential musical behaviors, such as singing, improvising, and composing” (p. vi). Though he did not look specifically at aural learning, he focused on music-making in ways other than by reading notation which necessarily included listening and playing by ear, as I did in my study. He conducted a mixed methods study in which the purpose was to describe music achievement and personal perspectives of high school wind and percussion students who learned to improvise and compose using a sequential music curriculum. The curriculum emphasized the development of individual musicianship and emerging behaviors of improvisation and composition. For eight weeks, “students improvised and composed [music based on ‘Amazing Grace’] based on [Azzara & Grunow’s] model in *Developing Musicianship through Improvisation (DMTI)*” (p. 36). Stringham found that, “Music aptitude, as determined by *AMMA* [*Advanced Measures of Music Audiation*, Gordon,

1989], was most predictive of improvisation achievement ($R^2 = .352$), followed by composite music achievement ($R^2 = .205$) and performance achievement ($R^2 = .160$)” (p. 102). Qualitative results revealed that students found the sequential nature of the curriculum helpful, they felt successful in learning to improvise and compose, and they generally agreed that learning music by ear was beneficial.

Woody and Lehmann (2010) explored the differences in ear-playing ability between formal “classical” musicians and those with vernacular music experience ($N = 24$). Participants heard melodies and performed them back by singing or playing on their instruments and the authors tracked the number of times through the listen-then-perform cycle that each participant needed for accurate performance. Participants also reported their thoughts and provided biographical information related to their music experience outside of school. Analysis indicated that students who sang were able to sing with fewer listening trials than those who played on instruments. They also found that the vernacular musicians required fewer listens than formally educated musicians. The vernacular musicians seemed to have a more sophisticated knowledge base to perform than the classical musicians. The latter used less efficient strategies, i.e., they were more concerned with figuring out fingerings for the pitches than the vernacular musicians, who seemed to do that more automatically. Woody and Lehmann reported that playing by ear is a foundational musical skill that needs to be researched more and included in school music more prominently. They also purported that “the development of ear playing may be a missing ingredient in promoting lifelong music participation” (p. 113).

In a review of literature on playing music by ear, Musco (2010) examined expert opinion and current practice, descriptive research, and experimental studies. She defined

playing by ear as “performance from memory of pre-existing music that was learned aurally without the aid of notation, without the visual stimulus of watching a live instrumental model, and without verbal hints such as being told the solfege” (p. 49). Musco discovered more research on learning by rote, which may include “verbal or visual hints” (p. 48), than learning by ear. She found that many experts advise playing by ear and many resources are available for developing skills. All of the literature she reviewed supports the importance and efficacy of aural-based instructional activities, which includes learning and playing by ear. All studies also indicated that learning by ear did not hold back or detract from musical aptitude or ability to read notation.

Even though Musco found that pedagogues advise playing by ear and research suggests that it has many benefits, based on her own experience, she purported that many teachers still may not include it in their curriculum, because of concerns that she grouped into five major categories: stereotypes and misconceptions that notation is the best way to learn music; worry that students who learn by ear may not ever learn how to read notation; traditions of performing composed music and challenges of high expectations for festival and contest that may prevent inclusion of learning by ear in the curriculum; lack of skills and knowledge on the part of teachers to be able to learn by ear themselves; and pedagogical doubts as to how to include playing by ear within their classes even if they want to. Musco suggested a clear need for additional research on the topic of playing by ear, including empirical data, more documentation of strategies used by musicians who learn by ear, and replication research of previous studies. Ultimately, Musco suggested that her review of literature supports the premise that playing by ear could be an integral component of the traditional instrumental curriculum.

Advice for Teachers

While the previous section includes research studies of aural learning and non-notation-based learning, this section includes summaries of practitioner-based books and journal articles.

Schleuter (1997) frequently quoted McPherson and Gordon in his book, *A Sound Approach to Teaching Instrumentalists*. Like both McPherson and Gordon, Schleuter indicated the importance of developing one's musical ear in order to be a successful musician. His approach suggested the sound-before-sight model in which students learn to play music through "rote training of songs, and pattern vocabularies and the process of verbal association which then leads to music reading" (p. 37), and promoted Gordon's (1993) "sequence for learning music through tonal and rhythmic patterns" (p. 30). He agreed that Gordon's (1993) concept of *audiation* was "the basis for music achievement and aptitude" (Schleuter 1997, p. 34). Schleuter pointed out the importance of reading notation but emphasized that playing by ear and improvisation should be a continuous part of musical training, even after one has learned to read music.

Dalby (1999) provided ways for music teachers to incorporate aural learning in their classroom, based on Gordon's music learning theory. Noting that instrumental teachers may be unfamiliar and uncomfortable with teaching based on audiation, or may be "hesitant to 'swim against the tide' of their profession by adopting values and methods that differ significantly from those of their colleagues" (p. 22), he offered suggestions for instrumental teachers to implement an "audiation-based approach" (p. 22) in instrumental music classes. He suggested systematically introducing audiation exercises into the

rehearsal time to add to the concepts they already taught. His eleven suggestions, ranging from “testing the waters” to “total immersion” are:

1. Sing to improve intonation and phrasing.
2. Postpone reading in beginning instruction.
3. Teach familiar tunes by ear.
4. Establish tonal and rhythmic context.
5. Teach the bass lines.
6. Internalize rhythm through movement.
7. Use tonal patterns to improve intonation.
8. Use Gordon’s rhythm syllable system.
9. Use tonal solfege in learning sequence activities to develop audiation of tonalities and tonal functions.
10. Begin rhythm reading with rhythm patterns instead of isolated whole notes.
11. Teach notation as recognition rather than decoding. (direct quote from pp. 22-25)

Duke (2012), grounded in research in cognitive learning, suggested that teachers, in their quest to help students in their struggles to efficiently accomplish goals, may actually hinder the development of learners’ independence. According to Duke, error correction is the process within learning that motivates a brain to commit an experience to memory or to alter an already stored memory. For this to occur in music, learners need to be able to discern the difference between what they know to be the right sounds and the actual sounds they are playing or singing. When teachers provide more assistance than students actually need, they inadvertently “limit learners’ development over the long term” (p. 37). Students do not often remember what to fix on their own if teachers simply “tell, show, and fix,” because students’ brains are not engaged enough to “actually create lasting change in the learner’s memory” (p. 37). Navigating this gap to solve problems on their own can be frustrating: “How learners deal with the unsettled feeling and frustration has everything to do with how well they will learn and how independent they become” (p. 40). Duke called this process of working through their frustration to find the solution

“muddling around,” and it helps students learn and retain knowledge. Through this process,

all of the errors along the way actually strengthen the memory of the solution and the path [they] take in reaching it. . . Doing that requires error on the part of the learners—failing, figuring out what happened, trying again, failing some more, figuring out some more, and finally getting it (p. 40)

Duke stated that, in addition, when students simply do what the teacher tells them to do, their motivation to learn is decreased.

In an article written for classroom teachers, Woody (2012) suggested that “many people divide musicians into two types: those who can read music and those who play by ear” (p. 82). He stated that formal music educators are generally among the first type, and asks them to reconsider their belief that playing by ear is appropriate only for only jazz and popular musicians. He gave reasons why inclusion of playing by ear can be beneficial for formal music education, pointing out that ear-based musical transmission and performance are the norm in many parts of the world, and that previous leaders in formal music education such as Lowell Mason, Shinichi Suzuki, Carl Orff, Zoltan Kodály, and Edwin Gordon, strongly advocated aural fluency before learning notation. Woody cited McPherson’s (1993) “empirical research that has provided evidence that ear-based musicianship is a facilitator—and not an obstacle—to other performance skills that are traditionally valued in school music programs” (p. 84). He also cited his own research with Andreas Lehmann that suggests that students who have both formal training and “vernacular” musical experience “have developed broad performance skills, whereas the exclusively formally trained students [in their study] face some serious limitations in musicianship.” (p. 85). Woody also suggested that “instead of looking for an expert’s prescription, teachers should trust their instincts and adapt what they are

already doing to engage their students' ears" (p. 86) through call-and-response, solfege, teaching recurring melodies in notated ensemble music by ear before hWhitneyng out printed parts, assigning ear-playing time for at-home practice, or having students listen to and copy recordings of excellent performers on their instruments. Ultimately, he suggested that music educators incorporate playing by ear into their curricula because of the evidence of the benefits for students.

Summary: Aural Learning

Based on the findings of studies in research and best practice literature, aural learning and learning to play by ear is an effective and important skill for learning music. I reviewed literature that put forth and examined formal approaches to acquiring aural skills and literature that examined how musicians learned by ear using more informal, holistic methods. This literature informed my understanding of how musicians from both formal and informal learning backgrounds develop aural skills and learn to play by ear. The current study sought to understand how formally educated high school band students, who are accustomed to playing mostly via notated sheet music, would learn to play by ear in an informal setting by listening to recordings.

Chapter Summary

Chapter 2 outlined literature in the areas of constructivism and aural learning in music. Within constructivism, I examined constructivist learning theory, constructivist approaches in music education, informal music learning, student-centered learning, and alternative approaches within in instrumental music education. Informal music learning serves as one aspect of the conceptual framework for my study. Studies of informal music learning examined the methods used by popular musicians of various ages and

abilities who may not have formal musical training. This literature also looks at music students' reactions and attitudes when informal learning practices are incorporated into a music classroom. Other studies compared formal and informal music learning inside and outside of schools. Researchers largely found that though informal music learning alone may not provide a comprehensive musical education, there are multiple benefits to incorporating these practices into the formal music classroom.

In addition to informal learning methods, the conceptual framework for my study includes student-centered learning. Studies using the term student-centered or student-directed were presented in this literature review. Praxial-based articles suggest that music teachers use student-centered learning in their classrooms, particularly small group learning, as it provides learners opportunities for open-ended problem solving, critical and creative thinking, teamwork, and social interaction. Research studies have mostly examined the students' roles, while fewer have investigated the teachers' roles in and perceptions about student-centered learning. I included the few studies looking at collaborative learning in general education and music classrooms, as the student-led learning groups in my study required students to collaborate through effective communication and cooperation. For this study, I utilized guiding definitions of student-centered and peer-directed learning methods to formulate my own definition of a student-led classroom. In this type of classroom, students are in charge of their own learning, which includes Green's notion of peer-directed learning within a student-centered classroom environment.

Research on alternative approaches in instrumental music was included in the literature review because this body of studies indicates a need for more variety within

instrumental music education. I discuss the methods pertinent to my study including comprehensive musicianship, democratic education, and small ensembles. Conclusions from the research studies in these areas indicate that including alternative learning paradigms could have a positive effect on students' attitudes and may increase certain aspects of musical achievement.

The literature on aural learning includes research studies examining the importance of aural learning on musicianship and musical skill-acquisition as well as paraxial-based advice for teachers. The literature points out that aural learning is an effective and important skill for music apprehension. Aspects of aural learning are referred to as aural copying, audiation, playing by ear, and listening and copying, all which encompass the notion of music learning without the aid of notation.

Chapter 3 Method

This chapter begins with a review of my research questions, and then describes the qualitative research approach that I have used for my study. Next I provide an overview of details about the participants and setting. Then I present the project's layout, followed by a description of procedures for data collection as well as data analysis procedures. Finally, I discuss trustworthiness of the study.

Research Questions

The purpose of this study is to investigate high school band students' processes of learning music aurally and in small student-led groups as well as their responses and reactions to student-led aural-based learning projects. The following questions guided this investigation.

1. How do high school band students navigate the process of aurally learning music?
2. What musical elements do students address?
3. What are students' responses and attitudes toward student-led, aural-based learning projects?
4. What benefits do students perceive from participation in student-led, aural-based learning projects?

Qualitative Research

I chose to use qualitative research methods to examine student-led, aural-based learning experiences of high school band students. In this section, I establish reasons for my choice of qualitative inquiry and a collective case study design. I also describe my role and positionality as the researcher.

Qualitative Inquiry

My study sought to construct meaning about the phenomena of aural learning and about student-led learning that occurred in a high school band classroom where informal learning took place. Qualitative research examines individual meanings and perspectives, so it is an appropriate method to address the questions of this study. Qualitative research, as an approach to inquiry, draws upon numerous disciplines and is based on certain philosophical assumptions (Bresler & Stake, 1992; Denzin & Lincoln, 2005). Creswell (2007) proposes that researchers make five major philosophical assumptions: ontological, epistemological, axiological, rhetorical, and methodological. He states, “The qualitative researcher chooses a stance on each of these assumptions, and the choice has practical implications for designing and conducting research” (p. 15).

Qualitative researchers embrace the ontological view of multiple subjective realities (Bresler & Stake, 1992; Creswell, 1998, 2007; Denzin & Lincoln, 2005; Stake, 1995, 2010), believing that knowledge is a human construct and that all we can know is based on our interpretations of experiences and observations. Bresler and Stake (1992) state, “The aim of qualitative research is not to discover reality, for by phenomenological reasoning this is impossible. The aim is to construct a clearer experiential memory and to help people obtain a more sophisticated account of things” (p. 76). Therefore, researchers and participants may embrace different realities, and it is the researcher’s duty to provide evidence of the multiple realities and perspectives of the different individuals within a study. Qualitative researchers also seek to give a vicarious account of the activities that took place in order for readers to draw their own conclusions and make their own

interpretations. I accomplished this by providing direct quotations from all student participants and attempting to represent each student's voice.

One epistemological assumption about qualitative research is that the researcher is the person most responsible for interpretations and therefore the researcher should collect data in ways that provide as complete an understanding of the participants' experiences as possible. Based on this assumption, I was out in the "field," getting to know the participants firsthand (Bresler & Stake, 1992; Creswell, 2007; Flinders & Richardson, 2002). Simply interviewing students would not have been enough for me to understand how they learned their songs. To determine their learning processes, I needed to observe them going through the learning process for myself. According to Merriam (1998):

Observations can be distinguished from interviews in two ways. First, observations take place in the natural field setting instead of a location designated for the purpose of interviewing; second, observational data represent a firsthand encounter with the phenomenon of interest rather than a secondhand account of the world obtained in an interview. In the real world of collecting data, however, informal interviews and conversations are often interwoven with observation. (p. 94)

The axiological assumption that characterizes qualitative research is that researchers' positionalities bring value to a study, so they must make their positions known (Creswell, 2007; Denzin, 1989; Flinders & Richardson, 2002). They do this by "positioning themselves" (Denzin, 1989), acknowledging their own values and that these values play a role in their research. I position myself by discussing in this chapter my previous experience with this subject, and by acknowledging when I pose my own thoughts and opinions throughout the study.

Qualitative researchers embrace the rhetorical assumption that writing will include their personal voice, perhaps literary in form, telling a story. This means referring

to themselves as “I,” telling stories, using terminology such as “understanding,” “discover,” and “meaning” (Creswell, 2007). I wrote “thick descriptions” (Geertz, 1973) to represent the participants and provide voice to their stories and their personal meanings to include voices of all participants. Denzin (1989) defined “thick description” by explaining that the qualitative account “presents detail, context, emotion, and the webs of social relationships . . . [and] evokes emotionality and self- feelings. . . . The voices, feelings, actions, and meanings of interacting individuals are heard” (p. 83).

A study’s methodological approach is “shaped by the researcher’s experience in collecting and analyzing data . . . to develop an increasingly detailed knowledge of the topic being studied” (Creswell, 2007, p. 19). An assumption about methodology in qualitative research is that the research proceeds based on inductive logic, meaning that when qualitative researchers begin research and formulate questions, they do not set out to prove or disprove null hypotheses, as quantitative researchers do. In qualitative research, “hypotheses” take shape as the study unfolds and are based on emerging themes throughout the study, which may require revising research questions in the midst of a study to ask new questions to better understand the research problem (Creswell, 2007; Flinders & Richardson, 2002).

Collective Case Study Design

I utilized a case study design for my study. Stake (1995) defines a case study as “the study of the particularity and complexity of a single case, coming to understand its activity within important circumstances” (p. xi). Creswell (2007) notes that a case study seeks to “understand an issue or problem using the case as a specific illustration” (p. 73). Yin (2006) notes that use of a case study design is appropriate when one wants to

“illuminate a particular situation, to get a close (i.e., in-depth and firsthand) understanding of it” by being able to “make direct observations and collect data in natural settings” (p. 112). Important in the process of studying and reporting cases is preservation of the uniqueness of the case, which includes

1. the nature of the case
2. its historical background
3. the physical setting
4. other contexts, including economic, political, legal, and aesthetic
5. other cases through which this case is recognized
6. those informants through whom the case can be known. (Stake, 1994, p. 238)

Stake (1994) lists three different case study designs: the intrinsic case study, the instrumental case study, and the collective case study. In an intrinsic case study, the particular case is of interest because of its unique qualities. The instrumental case study is one where "a particular case is examined to provide insight into an issue or refinement of theory" (p. 237). The third type is a collective case study, which is an "instrumental case study expanded to several cases" (p. 237). It is often called a multiple case study because the researcher is dealing with several cases simultaneously. Individual cases are not compiled into one story, but they are more effectively perceived as “a collage of patches, structured by experience and contexts” (Stake, 2010, pp. 180-181). When looking at multiple cases, small comparisons may be made throughout the research process, “but how things work depends mostly on observing broadly how some of the individual things work rather than on comparing one group to another” (Stake, 2010, p. 27).

Although I was at one school site, I defined a case as one five-member student group, and chose a collective case study design because it allowed me to gain in-depth information and deeper insight from more than one case. Yin (2006) refers to this as “embedded subcases within an overall holistic case” (p. 113). Bresler and Stake (1992) specify that while multiple cases are being studied, “one tries to preserve the uniqueness of the individual case, yet produce cross-site conclusions” (p. 85). Yin (2006) specifies that when attempting to find “presumed replications of the same phenomenon,” or confirmatory cases, one should identify and observe three or more cases (p. 115). In this type of case selection, “audiences also like to see some geographic, ethnic, size, or other related variation among the cases” (p. 115). Though doing multiple case study work may be complicated, Yin also points out the advantages of it:

First, you will be able to show your audience that you can practice the complete cycle of case study research (e.g., design, selection, analysis, and reporting) with more than a single case, reducing suspicion that your skills were limited to a single case that also might have been personally special to you in some way. Second you would be able to respond to a common criticism of single-case studies—that they are somehow unique and idiosyncratic and therefore have limited value beyond the circumstances of the single case. Third, you will have a modest amount of comparative data, even if the cases were chosen to be confirmatory cases, helping you to analyze your findings. (p. 115)

In this study, I first report on each case by providing a “rich, thick description” (Geertz, 1973) and then I present a chapter discussing common characteristics as well as the uniqueness of each case, also called the cross-case analysis (Miles & Huberman, 1994; Bresler & Stake, 1992).

My Positionality

In this study I espouse the social constructivist worldview. Qualitative researchers who take up the social constructivist worldview “recognize that their own background

shapes their interpretation, and they ‘position themselves’ in the research to acknowledge how their interpretation flows from their own personal, cultural, and historical experiences” (Creswell, 2007, p. 21). In seeking to understand the actions, thoughts, and processes of a student-led aural-based learning project through the experiences of the participants, I acknowledge that my own positionality and bias played an active part in my interpretation of participants’ meanings of their experiences.

Subjectivity in qualitative inquiry is an essential element of understanding. Glesne (2006) explains:

. . . subjectivity is the basis for the story that you are able to tell. It is the strength on which you build. It makes you who you are as a person and as a researcher, equipping you with the perspectives and insights that shape all you do as a researcher. (p. 123)

The researcher’s positionality cannot be removed from a qualitative study and is a welcome and necessary part of the research process. My position as a white middle-class female instrumental music educator with most of my training and experience in formal music education, the Western art music tradition, and the traditional band paradigm has shaped my biases. In addition, my experiences with aural learning influence my interpretation. To assist the reader in interpreting my findings, I will recount these experiences in brief.

After receiving my Bachelor of Music Education in instrumental music education, I taught instrumental education for two years as an assistant in a large instrumental program in the southeastern U.S. I was a traditional band teacher, i.e., I worked in a teacher-led large ensemble paradigm, rehearsing music either the other band teacher or I chose. Although we incorporated student-led small groups into our curriculum, it was largely outside of band class, with a couple of partial class sessions devoted to students

working in small groups to prepare for Solo and Ensemble Festival. After those two years, I returned as a full-time master's student at a different university to work on my Master of Music degree in Flute Performance. There, I had a key experience that caused me to consider the role aural learning plays in classically trained musicians' lives. The flute professor assigned everyone in the flute studio to choose and learn one song we listened to outside of school, and learn to play the melody aurally, without using notation. Though I had not had an assignment like this before, it did not seem difficult. I was constantly thinking through and figuring out the flute fingerings for the melodies of my favorite pop songs. However, I learned that perhaps not all people have a knack for listening to and playing tunes from the radio on their primary musical instruments. The horror that embraced several of the undergraduate flute students was surprising to me. Why did there seem to be such a lack of connection between their formal musical training and simply "messing around" or playing for fun? Why were advanced music students paralyzed by fear when asked to play a pop song by ear on their flutes? Had they ever gotten side-tracked during a practice session or even during a homework session attempting to play a familiar song on their instrument, "noodling" around until they figured it out? After I completed my master's degree, I returned to teaching in a high school band program similar to the first teaching position I held. It was in that job that I met Michael, whose story opens Chapter 1.

In informal conversations with colleagues and former students, I learned that many of those who are mostly classically trained are quite uncomfortable playing their instruments without notation, expressing fear at the thought of having to play music this way. I have spoken with band and non-band students who play something other than a

band instrument (such as guitar or piano) by ear. They may have picked up this instrument by simply listening to and playing along with music they liked. Examples from my life are two church pianists, several guitarists who play mostly in church bands, and a couple of former students who play band instruments but who also play guitar mostly by ear.

Listening to and copying music is a major principle in Lucy Green's (2001, 2008) informal learning practices. Having read her research on informal learning, I began to wonder what would happen if I implemented informal learning practices with high school students who were classically trained and had relatively highly developed musical skills. My experiences in the flute studio and as a band teacher led me to believe that learning a tune by ear could be both a challenging and frustrating endeavor for these students because, though they have a high level of musical skill, it is based in large part on their ability to read music. I wondered what would happen if the music were taken away. Could the students rely solely on their ears for musical performance? From reading Lucy Green's works, I also wondered what would happen if I asked them to play by ear on their own, without teacher-directed instruction?

My personal experiences have led to my interest in pursuing this study. They also illustrate the values I place on aural learning, especially outside the realm of classical musical training. I acknowledge that this bias has had an effect on my interpretation throughout the study. For example, had I not had these experiences with playing by ear, and specifically with formally trained students, I may not have chosen to research this topic at all. Had I had negative personal experiences with aural learning or playing by ear, I may have chosen to do this study but from a different positionality.

Researcher's Role

Qualitative researchers rely heavily on interpretation “throughout the planning, data gathering, analysis, and write-up of the study” (Stake, 2010, p. 55). Stake (2010) notes the importance of “acknowledging the researcher as the data gatherer and interpreter but not a main character in the play” (p. 179). The qualitative researcher is the research instrument, “observing action and contexts, often intentionally playing a subjective role in the study, using his or her own personal experience in making interpretations” (Stake, 2010, p. 20). In standard qualitative practices, based on the epistemological assumption that the researcher is the person most responsible for interpretations, the researcher should be the person out in the field making observations, in order to base interpretations on a first-hand account of the events that take place. Erickson (1986) called the interpretations made by qualitative researchers “assertions,” the “best developed meaning we give to the most important things, including ‘how they work’” (as cited in Stake, 2010, p. 55).

As I gained new knowledge and understanding throughout the study, I solidified new meanings in order to connect them with existing ideas (Stake, 1995). I have reported findings by taking the view that there is not simply one true meaning of an event. Stake (2010) stated that, “People will interpret the events differently and often multiple interpretations provide a depth of understanding that the most authoritative or popular interpretation does not” (p. 66). In addition to my interpretations as the researcher, readers will construct their own understandings, and though there may be commonalities, each person’s understandings will be unique (Stake, 1995, 2010). Stake (2010) states, “readers sometimes can see more depth in our reports when we portray more than a

single reality” (p. 66). To assist in this portrayal of multiple realities, the band teacher of the students involved in my study was a co-researcher with me.

Participants and Setting

Participants

Participants for this study were students in the 45-member advanced band of a high school band program (grades 9-12). All students in the high school advanced band were invited to participate in the study, which took place during the regularly scheduled band class for one full class period each week for eight weeks. Every student participated in the student-led aural-based learning project whether or not they were study participants. The students who returned parental consent (Appendix A) and child assent forms (Appendix B) were considered as participants for the study. Only one of the 45 students did not turn in the consent forms, but not all students were included as participants in the study. Nick, the band teacher, had nine available small group rehearsal spaces, so we asked students to self-select and form nine different groups of five students each. The group that included the student who did not turn in his consent form was excluded from my study. After Session 2, Nick and I discussed the make-up of each of the nine groups. I asked for Nick’s help in selecting groups for my study to include maximum variation (Creswell, 2007). From our conversation and my own thoughts, I decided to use four groups as my study participants: The Beats (playing the Beatles’ “Revolution”), The Abyss (playing Adele’s “Rolling in the Deep”), No Country for Old Men (playing Steely Dan’s “Rikki, Don’t Lose that Number”), and That One Group (playing MGMT’s “Kids”). Therefore I had initially had 20 student participants. After Session 5, I had only 19 student participants as one of the members of No Country for

Old Men moved away. The four groups combined include students representing a balance of instrument, grade level, and gender, as shown in Table 3.1.

Table 3.1

Table for Purposeful Selection of Participants¹

	Male WW	Female WW	Male Brass	Female Brass	Male Perc	Female Perc
Freshman		Tori Whitney				
Sophomore		Haley Emily Shannon				
Junior	Tyler	Rachel Alyssa Alexis Kayla	David Clayton Chris	Brittney	Tim	
Senior	Michael		Scott Cody		Jake Justin	

Co-Researcher and Co-Teacher Role with the Band Teacher

The primary participants in this study were students in a high school band class. Their teacher, Nick James, had been at MHS for five years and prided himself on his philosophy and ability to develop a contemporary and comprehensive high school band program focusing on the interests of his students. His insights were useful for this study because he knew the students on a day-to-day and year-to-year basis. In preliminary conversations with Nick, we agreed that he and I would be co-researchers in this study. We had weekly informal discussions, which I audio-recorded and transcribed, about students' progress, successes, and problems. Because I was the primary researcher, I

¹ All names have been changed to pseudonyms.

formally interviewed him three times during the project to gain his insights as the student participants' teacher.

Though Nick ultimately functioned as the person in charge of classroom management and overall direction of the class, he and I took similar positions as co-teachers on project days, overseeing that students were on task and working. Although not planned for this study, Nick's student teacher, Lauren, functioned as a teacher-observer as well. She walked around and observed students, sometimes offering suggestions or asking questions, as Nick and I did, but she was not a co-researcher.

Because groups were in multiple rooms throughout the band area, Nick, Lauren, and I floated from group to group to observe and ask questions. We were as minimally invasive to the groups' learning as possible: when students were at an obvious lull and I was in the room, I asked questions to get them talking to one another or made suggestions for things they may want to focus on. We engaged with students in the classroom activities by listening, observing, questioning, and suggesting, but not redirecting students' activities, because the project was to be as student-led as possible. Nick and Lauren took a more hands-off approach to helping students and waited for them to ask if they needed help. Nick did not offer suggestions or ask questions to help them get going again without their solicitation. Based on my audio- and video-recordings, it appeared that Lauren offered suggestions a couple of times during the study.

The Setting

All data collection took place in a high school located in a suburban area of an ethnically diverse city in a major metropolitan southwest city. Based upon 2009 statistics from the U.S. Census Bureau, there were 4,364,094 total persons in the entire

metropolitan area. The population breakdown was: 87.2% White alone; 5.2 African American alone; 2.5 American Indian, Alaska Native alone; 3.0 Asian alone; 0.2 Native Hawaiian and Other Pacific Islander alone; 1.8 two or more races. Hispanic or Latino was 31.7% and was placed in a separate category, specifying that “Hispanic or Latino may be any race.”² I obtained more detailed information about the school and the symphonic band during the course of the study. See Table 3.2.

Table 3.2

Numbers and Percentages of Ethnic Makeup

Ethnicity	Number in School	Percentage in School	Number in Symphonic Band	Percentage in Symphonic Band
African-American	192	10	2	4
Asian	112	6	4	9
Hispanic	702	38	7	16
White	708	38	32	71
Other	129	7	0	
Total	1843		45	

Consent Procedures and Confidentiality

The procedures for this study were approved by the Arizona State University Institutional Review Board (see Appendix C) and by the high school’s district office (see Appendix D). To assure confidentiality, names of all people and places have been replaced with pseudonyms. Students in the study seemed to work together without regard to race, so though I have provided these statistics, the participants’ race or ethnicity did not play a major part in my study. Therefore, pseudonyms are not meant to reflect a student’s race/ethnicity and I have not identified the race or ethnicity of participants.

² http://www.census.gov/compendia/statab/cats/population/estimates_and_projections--states_metropolitan_areas_cities.html

Data Collection

In this section, I describe the study design and the procedures I used to collect data. To gather data, I observed, audio- and video-recorded students working during band class; interviewed student participants (Appendix E) and the band teacher (Appendix F); and collected student artifacts.

Data collection took place over an eight-week period during the fall semester of 2011. I introduced the project in two consecutive class periods in the first week. I then observed the student groups' work during band class for an entire 50-minute class period one time per week for seven weeks. Students only worked in class on the project on the days that I was there. In the eighth week, I conducted final interviews. Table 3.3 demonstrates the flow of the study.

Table 3.3

Timeline for Data Collection

Week	Activity
Week 1	Interview 1B: Band teacher interview
Day 1	Introduce the project Distribute parent consent forms
Day 2	Students sign up for small groups Collect parent consent forms
Day 3	Session 1: Students bring music and choose songs Small group work – students learn a portion of their song by ear – and reflection forms
Week 2	Session 2: Small group work and reflection forms Interview 1G: Group interviews during band class
Week 3	Session 3: Small group work and reflection forms Interviews 1I: Individual interviews during band class
Week 4	Session 4: Small group work and reflection forms
Week 5	Session 5: Small group work and reflection forms Interview 2G: Group interviews during band class Interview 2B: Band teacher interview
Week 6	Practice Performances with written peer and teacher feedback
Week 7	
Day 1	Session 6: Small group work and reflection forms
Day 2	Final Performances
Week 8	Interview 3G: Group interviews during band class Interview 3B: Band teacher final interview

Observations

Nick was ultimately in charge of classroom during the project. He, Lauren, and I took similar positions, overseeing that students were on task and working. This was similar to Green's (2008) study in that the teachers were in the room in a facilitator role.

The difference was that Green and her teachers worked to be completely hands-off. We attempted to do the same, but at times found ourselves scaffolding student learning while watching groups work. Groups met in nine different spaces throughout the band area, and Nick, Lauren, and I floated from group to group to observe and ask questions. The project was student-led and, while the three of us made suggestions, asked questions, or offered opinions, we did not tell students how to solve a problem or give “correct” answers without their specifically asking for it.

I observed students in in-class practice and during performances and documented my observations via field notes taken in a notebook. As an up-close observer, I was in the same room with different groups at different times listening, observing, offering suggestions, asking questions, and observing body language, conversation, and methods students used to learn the music.

Because I was not able to be in every room with every group all the time, I video- or audio-recorded each regular class session using two Flip-Cam video-recorders and two Sony digital voice recorders. I also made video recordings of the practice performances and final performances. I do not, however, have recordings of the short sessions that occurred directly before and after the practice performance or the final performance. Because I only had two of each type of recording device, I rotated groups when placing each type of recording device. For example, if I placed the video-recorder with The Abyss for Session 2, I placed the audio-recorder with them for Session 3 and so on. I walked in to each group’s session as they were getting started to place the recorders and start them. I also stopped them at the end of the sessions, usually after the bell had rung

and the students had left. Video-recordings allowed me to observe both verbal and non-verbal communication.

Student Artifacts

Students filled out short reflection forms (Appendix G) at the end of each project session. I used these forms to get a sense of students' preferences about and processes during the project, as well as for formative assessment purposes. With student permission, I collected other documents they constructed while creating their musical arrangements, including notation and scribbles they wrote on paper (Figures 5.1-5.6 in Chapter 5).

Interviews

Eder and Fingerson (2001) stated that interviewing children to understand their perspectives is valuable:

One clear reason for interviewing youthful respondents is to allow them to give voice to their own interpretations and thoughts rather than rely solely on our adult interpretations of their lives. For example, rather than forming our views on the content of the media that children use, it is important that we find out how they are interpreting what they receive. (p. 181)

In the context of this study, this argument suggests that it is important to understand students' interpretations of their musical choices and arrangements, as well as the artifacts they produced. My observations and interpretations of students' rehearsal interactions and the artifacts they created would yield only an incomplete understanding of their processes for aural learning.

Therefore, I conducted three group interviews with each of the four participant groups in order to better understand their perspectives and thinking processes more clearly. The purpose of the student interview questions was to help me understand how

the students made sense of the material they produced, the rehearsals they conducted, and the information they gleaned. The interviews were semi-structured and allowed students to articulate the intent behind their actions and thought processes (See Interview Questions – Appendix E). The group interviews each lasted 25-30 minutes. In addition, I conducted one individual 10-15 minute interview with one member of each participant group. The student I chose to interview was quieter than other group members; I hoped that an individual interview might help them feel freer to speak their minds.

The first group interview occurred after Session 2. During this interview I asked students general questions to get to know them and their backgrounds. I also asked questions concerning their attitudes toward band, the pop song they chose to learn to play, how they were going about learning the song, and their attitudes toward the project up to that point. Individual interviews occurred after Session 3, when I saw that some students were not quite as vocal as other students in the group interviews; I asked similar questions as the ones I asked in the group interviews. The second group interview occurred after Session 5, at approximately the mid-point of the project. I thought that the students' perceptions, attitudes, thoughts, and processes might change during the study, so I asked them similar questions in this interview. I also asked specific questions as to what they had figured out up to that point. The last group interview, which occurred after the final performance, was to ask students to reflect on their processes, attitudes, and benefits/downsides of the entire project.

In addition, I interviewed Nick three times during the project, to learn about his perceptions, attitude, and thoughts about the project (see the consent form, Appendix H, and interview questions, Appendix F). It was important for me to understand why he

chose to do this project with the students and his attitude toward the process and outcomes of it. In the first interview, which occurred immediately after the introductory class time on Monday before the project actually began, I established basic information about him as a music teacher, asked him questions as to why he chose to do the project and how he thought it might turn out. In interview 2, which occurred in the middle of the project's timeline, I focused on questions concerning his perceptions, attitudes, and thoughts about the project while we were in the middle of it. In the third and final interview, conducted after the final performances, I asked questions concerning the project overall, including Nick's perceived positives and negatives, his overall reflections on it, and any other pertinent thoughts he had about it. After I had transcribed each interview, I emailed the transcript to him for him to read over and add to or change anything he felt necessary. Nick did not request any changes.

Copyright and Equipment Issues

Copyright issues can be a problem when teaching music that is not in the public domain. Frankel (2009) noted that, though fair use allows teachers much latitude when using copyright-protected materials, it does not give them a blanket license to do anything they choose. He clarified, "If your use is educational, meaning that you are using the materials to teach a class in a public school, college, or university, then your use may be fair" (Frankel, 2009, p. 73).

Each group chose one school-appropriate song to learn and found their own recordings. Most of them chose to stream them via an online source like Youtube and did not actually purchase the songs. Some groups listened to multiple streaming versions of their songs. I did not purchase or provide any songs for the students.

Because students in this study used songs that they brought from outside of school, I required parents of those students to sign a letter (Appendix I) in which they wrote the name of the song and the artist and acknowledged that they or the student had legally purchased the song and that it was not a “pirated” copy. Because students largely used streaming sources to listen to their songs, this was quite difficult to manage. However, having parents sign the form put responsibility on the parents for legitimately obtaining music.

To ensure that each group had proper electronic equipment throughout the project, we asked students at the beginning to volunteer their own equipment by providing their own iPods, smart phones, or other electronic music-listening devices, and speakers. All groups were able to provide their own listening devices, and most were able to use their own speakers. Some group members provided their groups with iPod docks or external portable speakers to listen. I personally provided three sets of portable speakers for groups who did not have their own and who wanted to use them. I encouraged all nine groups to use speakers that plugged in and gave more volume than internal smart phone speakers so that they could hear better, but not all groups did so. Some groups who played their songs by streaming them via their smart phones chose to use their smart phones’ internal speakers, which were not loud enough to be heard over their instruments. Because it was also a matter of frequency of the sound waves and not just volume, students may have also not been able to hear all parts well with the internal speakers.

Introducing the Project

On the first day of the project, Nick introduced me to the students. To begin the project, I initially played a pop tune (“Halo” by Beyoncé) for the students as a large ensemble. I chose this song because it was a popular song frequently played on the teen radio stations at the time of the study, and I thought students would be relatively familiar with it. I also chose this song because the chorus (the part I had them focus on learning by ear) went up by step and did not have large skips in it so as to make it easier to decipher the notes by ear. I told the students, “We are going to listen to a song from the radio. Listen to the song and as you get more familiar with it, see if you can figure out how to play any of it on your instrument.” I played the recording one time all the way through for the students to listen. I then played it again and told them to try to play along if they could, even if it was to figure out one note. I then “dropped them in to the deep end” (Green, 2008) to choose one part of the music texture (melody, countermelody, harmony, percussion parts) and figure it out by ear, which required them to figure out their own methods of learning how to play the line. When I played the song the second time, there was a cacophony of sound as students attempted to find pitches and discussed their attempts and thoughts with each other. Nick and I stood back and listened in on conversations and playing. After about three minutes, I played just the chorus three more times and told the students to try to hone in on the pitches in the chorus melody to see what they could figure out. Each time I played the chorus, I could hear that more and more students were getting more notes as they played along with the recording.

The purpose of this first class was to introduce the project and to give students an idea of what they would be doing in their small groups in the following weeks. After we

had finished with the demonstration, I asked, “How many of you were able to figure out most of the chorus melody?” Only a few raised their hands. Then I asked, “How many were able to at least get a few notes?” About half raised their hands. And when I asked how many were able to get the first note, most but not all students raised their hands.

Then I explained,

Now this is what you will be doing on Wednesdays for the next seven weeks. You are going to sign up in groups of five students, decide on a song to learn to play, and work on learning to play it by ear. We will have a class concert at the end of the project and you will be able to perform your arrangements for each other.

I gave them more specifications such as, “songs must be school-appropriate and approved by Nick;” “you will need to work out who will bring the music and who will bring speakers to listen to your recordings;” and “you should only use your band instruments.”

This last directive was at Nick’s suggestion, as he wanted to keep the project for band instruments only. This initial lesson took about 30 minutes of the 50-minute class period.

The rest of the time, we allowed students to start choosing groups and think about possible songs.

The Tuesday after this initial Monday introductory session, I was not there, but Nick required that students bring back their forms and sign up in groups so that by Wednesday of that week (the first official full session of the project), they were ready to divide up in groups and work. I was there for the Wednesday session, and from this Wednesday on, students worked on Wednesdays of each week of sessions 1 through 6. By the end of Session 1, we expected them to have chosen their song in order to begin learning the song during Session 2. Throughout the next seven weeks, they listened to, discussed, learned, and put together sections and layers of their songs, ultimately creating

an arrangement to perform. These sessions were unstructured so students could choose to work on the content they wanted at the pace they needed.

In Session 3, based on listening to audio-recordings and watching video-recordings of the previous session, I saw that students were getting confused about transposition between instruments. Because I did not want transposition to become the major focus of the project, I held a 5-minute large group session at the beginning of Session 4 where I passed out transposition charts (Appendix J) to everyone, briefly explaining how to use them if they so chose. Although my intention was to “drop students in the deep end” (Green, 2008), I later determined that, in addressing this problem, the transposition charts may have inadvertently scaffolded some students’ learning, while the lesson may have been too brief to be meaningful for other students..

During the Week 6 class session, all groups played a practice performance. Each group had 10 minutes at the beginning of class to warm up, rehearse their song on their own, and make last-minute changes if needed. I told them:

This performance is supposed to be informal so you are not expected to have a finished performance yet. Just play whatever you have worked out up to now. This is just a practice performance to help you see where you are and get some feedback from other groups so that in your next rehearsal you can figure out what else you need to work on before the final performance.

For the practice performance, because there were nine groups, I divided the students into three groups of that met in three different locations. I observed one set of three; Nick, another; and Lauren, another. For example, The Abyss, No Country for Old Men, and another group not in my study performed in one room and I was the teacher listening in that room. Each group performed their song for the other two groups, who listened and wrote feedback on their feedback forms (Appendix K). The teacher in each room also

wrote feedback using the feedback forms. At the end of each group's performance, I invited some of the students to discuss issues they noticed about the performance, and I gave verbal feedback as well. After they performed, the members of each group collected all of their feedback forms to review later. A similar session occurred simultaneously in two other locations with three groups in each location. After all groups were done performing for each other and giving feedback, they each had about 10 minutes at the end of class with their group to discuss their performances, review their peer and teacher written feedback, and rehearse if they wanted.

Final performances took place in Week 7 on Thursday, after Session 6 that occurred on Wednesday of that week. Because all nine groups performed for the entire class, the groups did not have time at the beginning of class to do much reviewing. The day before, I suggested that they could plan to meet a few minutes before class and warm up if they wanted. Some groups discussed meeting early and some groups did not. I was unable to determine whether or not they actually met early to warm up. Also, in the Wednesday session, Nick walked around to each group and had them draw their performance order number out of a hat. Appendix L shows the program for the final performances.

Data Analysis

I analyzed the data through narrative analysis. Polkinghorne (1995) defined the product of narrative analysis as “studies whose data consist of actions, events, and happenings, but whose analysis produces stories (e.g., biographies, histories, case studies)” (p. 6). Data that I used included transcriptions from video and audio recording, individual and group interviews, teacher interviews, and analysis of student artifacts. All

notes and recordings were transcribed (Emerson, et al., 1995) and coded using Hyperresearch data coding software. After I coded all transcripts, I reported my findings in the form of “rich thick descriptions” (Denzin, 1989; Geertz, 1973) and cross-case analysis. According to Stake (1995):

To describe the case, we try to present a substantial body of contestable description. We want to tell quite a bit about the case that almost anyone, who had our opportunity to observe it, would have noticed and recorded, much as we did. (p. 110)

To create the individual cases, I initially wrote a detailed narrative of each session and the performances of each case based on the audio- and video-recorded transcripts. As I continued to analyze and categorize my data, common themes began to emerge among participants and participant groups. Once I had identified these overarching themes, I revised the narratives, keeping the actual occurrences of the sessions intact, but cutting out redundancies and superfluous information. For each case, I wrote one or two session narratives in great detail and summarized the other sessions, highlighting only the parts of those sessions necessary to understand the progression of each group’s work. The four cases appear in Chapter 4.

I then conducted cross-case analyses to address the research questions of my study. The use of cross-case analysis expanded the findings beyond the individual participant groups to provide a holistic view of students’ learning processes, responses and reactions to the student-led aural-based learning project (Yin, 2009). The cross-case analysis in Chapters 5, 6, and 7 presents the common themes for all four cases and highlights differences across them. In these chapters, I also relate my findings to prior literature. Chapter 5 discusses students’ learning processes and their group dynamics.

Chapter 6 examines how students learned to play by ear and the musical elements they

dealt with. In Chapter 7, I examine students' attitudes toward the project and the benefits they perceived from the project. Chapter 8 offers suggestions for practice for teachers of large ensembles in elementary and secondary levels and for the preparation of preservice music teachers. In this chapter, I also make suggestions for future research and end with concluding remarks.

Trustworthiness

Qualitative researchers establish trustworthiness to help ensure that their interpretations and personal understandings do not overshadow the voices of the participants or the readers' own interpretations. Misunderstandings can occur "because the researcher-interpreter is unaware of his/her own intellectual shortcomings and because of the weaknesses in methods that fail to purge misunderstandings" (Stake, 1995, p. 45). In qualitative research, trustworthiness is strengthened by thorough accounting of the methods used in collecting and analyzing data. Creswell (2007) lists eight strategies used by qualitative researchers to enhance the trustworthiness of their interpretations: prolonged engagement and persistent observation; triangulation; peer review and debriefing; negative case analysis; clarification of researcher bias; member checking; rich, thick description; and external audit (pp. 207-209). Creswell recommends that qualitative researchers engage in at least two of these in any study. To establish trustworthiness, I incorporated six of these into my research design.

I utilized prolonged engagement and persistent observation by conducting my study over the course of eight weeks. In case study research, prolonged engagement with participants ensures a higher degree of the researcher being able to "get meanings straight" (Stake, 2010, p. 123). Students had opportunities to make comments and

provide different interpretations of their experiences as I conducted group interviews three different times, asking similar questions each time. Creswell (2007) states that “in triangulation, researchers make use of multiple and different sources, methods, investigators, and theories to provide corroborating evidence” (p. 208). While triangulation may be a form of validation, it may also be a form of differentiation, in order to give “more respect for multiple points of view” (Stake, 2010, p. 123). Concurrent observations and analyses of the same phenomena by both researcher and participants allows for comparison of data from different sources.

I used negative case analysis to take into account such things as disconfirming evidence and contradictory interpretations that occurred within the study (Eisner, 1991; Lincoln & Guba, 1985; Miles & Huberman, 1994). I sought disconfirming evidence by including participants’ perspectives that were different than the majority of their peers. For example, though most students in my study overwhelmingly enjoyed the project, I reported the perspectives of several students who did not enjoy it. I have included a clear account regarding researcher bias by stating my positionality about the subject matter I am researching. Creswell states, “rich, thick description allows readers to make decisions regarding transferability (Erlandson, 1993; Lincoln & Guba, 1985; Merriam, 1988) because the writer describes in detail the participants or setting under study” (Creswell, 2007, p. 209). I have described the students’ work during class in detail, to allow readers to better evaluate the applicability of my work for their own situations.

Chapter 4 Rich Thick Descriptions

Nick's symphonic band had 45 students. He identified nine possible work spaces, so we decided that students should work in groups of five, which seemed to us a manageable number for small group work to take place. Students were free to choose their own groups. From the nine groups, I asked for Nick's help in choosing groups for the study to fulfill my criteria: students representing a balance of instrument, grade level, and gender. I decided to use four groups as my study participants. They decided their own names, as it was a question I had them answer on their reflection forms. Students did not call themselves these names except in the final performance. The Abyss chose the song by Adele, "Rolling in the Deep;" the Beats performed "Revolution" by the Beatles; The Abyss, No Country for Old Men chose the song, "Rikki, Don't Lose that Number" by Steely Dan; and That One Group performed "Kids" by MGMT. I refer to them by an abbreviated version of the song titles they chose.

In this chapter, I present each individual group's case. I introduce group members, giving their musical background and general thoughts about being in band. Although each of the six sessions had its own dynamic and processes, I describe one or two representative sessions in depth so as to paint a detailed picture of group dynamics and work ethic, and I summarize other sessions, highlighting important points. I also provide accounts of each group's practice performances and final performances.

Adele's "Rolling in the Deep" (The Abyss)

Getting to Know the Members of The Abyss

Haley. Haley, a sophomore flute player, has been in band since fifth grade. Like many members of the MHS band, she started playing violin in orchestra in the fourth

grade. When she got the chance, however, she dropped orchestra and switched to band, explaining that she “realized that there's only four instruments in orchestra and it was kind of boring and the sound wasn't that nice,” while she thought “band had a lot of options and a lot of music and it seemed really big and important and just more interesting.” She is still in band: “I like the flute” and “I like the music that we play.” Haley is the only member of The Abyss who is not currently in marching band, though she was last year.

Tori. Tori is the only freshman of the group. She has been playing oboe since fifth grade. Her mother, a “music director” who “wants [her] playing music,” taught Tori to play piano when she was very young. Tori played violin for one year in fourth-grade beginning orchestra, but did not stay in it, noting that “I didn’t want to do violin because my brother did violin.” She switched to band in fifth grade and now she is in it because she “like[s] the people a lot.” She also thinks band is “really fun” and likes the fact that it is “structured very nicely.” She notes however, that “sometimes I don't like practicing because my schedule is really busy.” In addition to being one of only four freshmen in the symphonic band, the top band at MHS, Tori also does gymnastics. She “used to do gymnastics from 5 to 9 almost every night” which cut in on oboe practice time, but she is “doing less hours [of gymnastics] this year, so I can practice more.” Tori also marches flag in the marching band.

Emily. Emily has played clarinet since fifth grade band and is currently a sophomore. She has been playing bass clarinet most of her band career, she switched over “halfway through sixth grade” because she prefers the bass sound. Emily also began taking piano lessons around age six and, though she does not take lessons anymore, she

still plays. Emily joined band because it “seemed really exciting” and she “wanted to play an instrument.”

Rachel. Rachel, a junior, plays bassoon in the symphonic band. She started band in fifth grade, playing “percussion for a semester. Then I switched to euphonium and then half way through freshman year I switched to bassoon.” She played viola in orchestra during fourth grade but switched to band in fifth grade because she “always liked band better. My uncle's actually a band director so I've kind of been exposed to band for a long time so I've always liked it.” She is also in marching band, playing a different woodwind instrument, though I am not sure which one.

Alyssa. Alyssa was the drum major of the band this year. She is a junior who has been playing flute since fifth grade. She also plays piano and organ, but “not as much as I play flute and piccolo.” Alyssa is in band because she “enjoy(s) making music. I enjoy getting that beautiful sound out of it and trying to make it the best that it can be.” The thing she likes least about band is when “something really negative happens, and people react negatively instead of having a positive attitude” because it can ruin the entire rehearsal.

Choosing Groups

Alyssa said the process of choosing group members was “kind of mix and match.” They all knew each other from being in band together, but as Alyssa said, “we weren't super tight.” Haley and Emily decided that they wanted to work together, and asked Rachel if she wanted to join them. They needed two more people and “Tori wanted to be in our group, and then Alyssa wanted to be in our group.” Nick later explained to me that

no one really wanted to work with Alyssa because many of the students think she is bossy and did not want her in their groups.

Session 1

Most of this session involves scrolling through songs on Emily's cell phone and talking about song choices. Emily has "an app that has a bunch of music things on it," so the group "just went through a top 50 list and just picked one." I do not have a recording of most of Session 1, so it is unclear as to whether or not they listen to any of the songs or if Emily just reads the song titles. According to Alyssa, they discuss a couple of songs but one "had a couple rap parts and we were like, 'Aw, that's way too hard to do on an instrument.'" When Emily mentions "Rollin' in the Deep," Alyssa says, "Ooh, I like that song," and everyone else agrees as well.

By about the middle of Session 1, the group begins working on learning parts to their chosen song. According to Emily's reflection sheet, they worked on learning "the majority of the melody," and they "looked at the bass line and percussion." Emily (bass clarinet) and Rachel (bassoon) write that their goal for next class is to "have both percussion and bass line parts down." Alyssa (flute) plans to "learn the background singer[']s part] and assign parts"; Tori (oboe), to "help others find the bass"; and Haley (flute), to "learn more of the melody." At the end of Session 1, the group seems to have a clear vision of the division of parts, though through the next few sessions, they choose to make some changes to these initial decisions.

Session 2

They start Session 2 by listening to the song, clearly heard via speakers hooked up to Emily's device. Emily stops the recording in the middle. Rachel questions Alyssa

about which instruments should play the guitar and percussion parts. Alyssa responds that they could figure out specific parts later, and asks, “Alright, from the beginning again? Do you guys need another rep to try and figure out those notes again?” Instead of answering, Tori asks, “Who’s gonna play the melody at the beginning?” Alyssa responds that the flutes and oboe should probably play the melody.

The recording starts again, and Emily and Rachel noodle around to find the bass notes. Alyssa, Haley, and Tori join in to noodle around on the melody. As Alyssa tacks back and forth between the lead and background singers’ lines, she plays louder and gets more and more right notes. They stop when the bass line drops out after the chorus and Alyssa immediately begins assessing:

Ok, so basically the main verse goes (sings the repeating eighth note pattern as it sounds on the recording). Then the chorus part goes (sings it again). They just go between those two notes. So as soon as we figure out those lines, we’ll be good because later on in the song what we wanted to do is switch the bass line and melody and switch the top part to the background vocals.

Rachel is pleased, “Ok, that’s good. We’ve got progress.” Then Emily (bass clarinet), Rachel (bassoon), and Alyssa (flute) clarify the key (C). They know Emily’s note is something different and Alyssa tries to understand: “You’re playing a B-flat?” Emily responds with, “No, I’m playing a D.” Alyssa then asks, “For your last note?” Emily replies, “My last note’s a B-flat.” There is silence for several seconds then Alyssa says, “Play the whole thing” and Emily plays the line in question. Without Alyssa’s help, Emily has a moment of clarity: “Oh, I just go back and forth!” Alyssa asks, “Do you wanna play it one more time so you can hear it?” Emily plays the recording again and just the bass players (Emily and Rachel) play through the entire song. The high winds listen.

When the recording ends, two conversations emerge, with Alyssa, Tori, and Haley discussing the melody, and Rachel and Emily discussing their bass and percussion parts. When Emily starts the recording again, Alyssa plays most of the melody line, Rachel attempts the melody and settles into the right notes at the chorus, and Tori (oboe) and Haley (flute) play intermittently. Everyone plays mostly correct notes at the chorus melody but only Alyssa has figured out the verse melody.

When the recording ends, Alyssa asks, “Do we wanna try it without the music? Do we have a good enough sense of the beat?” Following some mumbling, Alyssa tells Rachel and Emily to start. They begin playing their bass parts and almost immediately, Tori asks, “Wait, how many beats until we come in?” They decide to listen to the recording and count measures. Rachel inquires, “So we just play the same note, then?” Alyssa confirms, “The intro is just the same note, I think,” but they do not discuss how many measures of rest before the melody enters.

Rachel and Emily begin to play again. This time after eight beats, Alyssa comes in with the melody and Tori and Haley follow her lead. The parts are all a bit shaky, but they manage to play together until they stop at the transition section. Alyssa immediately assesses their performance and strategizes their next move:

Playing it through without the music, I think what we most need to work on is the transitions between the phrases and what comes next . . . We know that phrase mostly. I mean, obviously there's a few wrong notes in it that we need to work out, but we know that phrase. Ok, what's the transition and what are the notes that we play to get to the next phrase? How do we get to the chorus? Ok, now we know the chorus. Ok, now how do we get to the next verse again? I think that's what we most need to work on.

No one responds, so Alyssa asks, “Alright, you wanna play it through and try and start figuring out some of that stuff?” Emily begins the recording and they play along

with it again, stopping at the second verse. Alyssa assesses that they need to work on the transition from chorus to verse. Haley quietly asks about a specific part and sings it.

Alyssa responds, “Yeah, I don't think any of us really know that part yet.” This type of interaction occurs throughout this session, with Alyssa suggesting that they play, either along with the recording or without it, and others asking her questions about parts.

The last four minutes of class, Alyssa suggests that they “start from the beginning” again. I am in the room at this point so I scaffold the process by making a suggestion, telling them to perhaps isolate the part that they are having trouble figuring out, rather than listening to the whole song. This seems to give Haley some confidence to speak, though she is quite tentative and shy in her presentation:

Um, at the beginning I noticed that, um, the (sings a part) sounds the same, but at the beginning, the second note is like hesitating, like . . . at the beginning there's one note that holds out and then down.

Alyssa asks, “For which part?” Haley plays the section on her flute, but it seems that no one understands that she is talking about a small nuanced embellishment that Adele adds in one instance of the chorus. Haley asks Emily to play the recording, but does not point out that part in the recording. As the song keeps playing, the others begin to play along. After the song ends Rachel asks Haley, “What part were you talking about?” Haley says, “At the very beginning there's only one little part. It's the (sings my heart). She holds it out instead of [it being] like the rest; it's just quick.” Alyssa tries to understand: “Ok, so just make sure we're playing it like we're singing it? Is that what you're saying?” Haley says, “Yeah, like *she* sings it, not just . . .” Finally, after a little more deliberation and Haley still not being clear, Alyssa ends with, “Alright, so just make sure we're all playing it the same way,” then revisits her original plan: to play the “transition part again.” Tori

calls attention to it being near the end of class. “Should we fill out our [reflection] forms?” They write and talk about what is on the forms, discussing what they worked on today and what their goal for next week should be. Class ends.

Session 3

Alyssa is absent, and Rachel takes the leadership role today. Emily and Rachel talk about the bass and percussion parts that they are planning to cover. Emily suggests that they “find the instrumental version” on the Internet to listen to, to which Rachel says, “That would be so great cuz then we'd just hear bass line.” They listen for a few seconds, but the fire alarm goes off so they leave. They return after about 15 minutes, but Haley immediately leaves for an appointment. Much like in Session 2, the three that are left spend the most of the time listening to the recording’s rhythm section and background vocals track, playing along with it, and talking about specific parts. Tori noodles on her oboe very intermittently, but mostly listens while Rachel and Emily listen to discuss transposition and other issues, and play the bass and percussion tracks. This excerpt shows how they work intensely and listen purposively to figure out and solidify their parts for both Sessions 3 and 4.

Rachel: What's the third note? C?

Emily: It's just two notes.

(Emily and Rachel play and have conversation about the notes.)

Emily: Oh, it's my F.

Rachel: So my E-flat then. So it just goes up the scale.

Emily: That's what I was doing.

(Rachel then plays the three notes up the scale faster than tempo just to check the pitches.

Emily then starts the recording again from before that part. She and Rachel play along when they hear that part begin.)

Tori pipes in, “Are we gonna do it again with the singers?” A short conversation about who is going to play the melody ensues. Tori suggests the flutes, and Rachel agrees, “Well, yeah, flutes and oboe. Emily and I are covering four parts right now. We can’t cover any more!” and she laughs. They decide that all will play all parts, so, at Tori’s request, Rachel tells her the notes for the bass line.

Emily plays the full recording this time. After the music stops, Rachel poses, “We need to go over the chords part.” So they play along with the recording again, this time with Rachel calling out the notes for the “chords part.” Emily stops the music intermittently and says, “I think that would be a good place for the bass on the melody.” Rachel responds, “Yeah, but that's not where Alyssa wanted it.”

After a few attempts at listening to and noodling around to a new section, it is close to the end of class so the group members fill out their reflection sheets in silence. Rachel asks, “Should we maybe write some of the music down?” but she and Emily decide, “It’s repetitive enough, we can memorize it.” However, Emily and Tori agree that it might be helpful to write down “how many times we repeat” certain sections. Based on the reflection sheet, they agree with Rachel that their group’s goal for next session is “to perform the whole song without music.” In response to another question on the reflection sheet, Rachel mentions to the group that the transposition chart I provided them was pretty helpful. The bell rings.

Session 4

Alyssa is absent for the second rehearsal in a row, which frustrates Rachel. (It turns out, however, to have a profound effect on the group’s dynamics, especially in

regards to Rachel taking the reins of leadership and working more cohesively with Alyssa when she returns.) Tori begins by asking, “Is the song three minutes long?” Emily answers, “Yeah, we’re gonna do the whole thing,” and starts the recording. Everyone plays along till it ends, when Rachel strategizes how they will learn the “breakdown part.” She and Emily get out their transposition charts and begin figuring out their notes, playing long tones on each pitch until Emily is able to match Rachel, and assessing whether they are correct or not. After about three minutes, they get that section worked out then begin working on the form of the song. Rachel writes as the recording plays then reviews what she wrote: “So far I’ve got the intro-versey part, then the chorus, then the verse then the chorus, chorus, verse, breakdown, chorus, chorus. It’s like a really awkward combo.”

Rachel and Emily go back to working more in depth on the “breakdown part.”

Rachel suggests,

I wanna make sure that we’re ready, the four of us. If Alyssa does show up, she’ll just play the melody the whole time, but if she doesn’t show up like she has two other times, I wanna be ready, you know what I mean?

Emily nods in agreement. Haley, who has been listening to Rachel and Emily rehearse their parts, asks, “Hey you guys, are we ever gonna figure out like specific things like dynamics and articulations?” Rachel tells her, “You’re good, as long as you can play [the melody notes].” Then Rachel and Emily go back to figuring out notes and transpositions for the breakdown part.

They all have a short conversation about practicing together at lunch, wondering when they can arrange to practice with Alyssa. Rachel gets impatient, “Ok, whatever. I’ll just talk to her. We’ll figure it out. As of right now, let’s attempt to play the song to the

music.” They play with the recording, Haley and Tori joining. (They are out of tune but do not address it.) They did not practice at lunch, to my knowledge.

Following brief discussion of several topics, they run the song, playing as a group for the first time without the recording. Tori and Haley start playing the verse melody together, but Haley splits off to play the background vocals, Tori flounders and stops them. Rachel tries to help her, explaining, “How I do it is, I’m like listening to the song in my head as we play. Like I don’t know how to explain it.” Haley jokingly suggests, “Maybe we should all sing the song.” Everyone laughs. The group attempts to play the song five more times together, both with and without the recording. They do not ever make it to the end, usually because Tori cannot carry the melody line alone. After stopping on the fifth attempt, Rachel strategizes:

Can we just omit that section (the breakdown part), because if we don’t have music we can omit what we want? We can just do verse chorus verse chorus verse chorus chorus and I mean it will be presentable at least. Cuz we need to get through this whole song without music and not fall apart after the full first chorus.

They fill out their reflection forms, Rachel reviews the structure (“vcvccvcc”), then they attempt it without the recording yet again, but still, Tori cannot play her part alone when Haley splits off to play a different part. Frustrated, Rachel says, “Let’s listen to the stupid song.” They listen, focusing on where Haley will play the melody with Tori and where she will play the background vocals. It seems that Tori is waiting for them to tell her what she should do. Then Rachel engages Tori in a conversation:

Rachel: Can you play the melody part during the chord stuff? Cuz you don’t really have like the same time that you did before. You’ll have to learn it on your own (laughs).

Tori: Yeah I know (laughs).

Rachel: Can you do it though? Like if you can do it confidently . . .

Tori: Yeah (appears to be thinking).

Rachel: You just have to make sure you can hit it every time we get to that part.

Tori: Yeah. I just have to listen to it a lot.

The others are concerned about being late for their next class, but Rachel argues, “I’m always the last one out and I’m still not late. Let’s just see how far we get. If the bell rings we’ll stop.” Tori messes up on the verse, but they keep playing. They get to the second verse somewhat successfully, but the bell rings and they rush out.

Session 5

Today, the group members warm up individually, playing scales and their parts from the song. The first thing Rachel says to Alyssa is, “Alright, so you haven’t been here for like two weeks.” Alyssa says, “Sorry,” and Rachel fills her in, but seems to be seeking her approval at the same time.

Rachel: So I guess we can cut it short now from what we had before. We can kinda cut out some of the double chorus stuff. (No response from anyone.) So we cut out that break part cuz it wasn’t happening.

Alyssa: Yeah.

Rachel: So as of right now we have the intro, verse then cvccvcc. We can cut some of that out obviously.

Alyssa: Yeah.

Rachel: So what would you cut out?

Tori: Should we listen to it?

Rachel (continues to Alyssa): Like we should obviously use the intro and then the end so we could cut out the middle vcc or the middle chorus.

Alyssa: We could do intro vcvcc end.

Devn: And the final chorus we can go (sings something).

Alyssa: So intro vcvcc.

Rachel: Yeah, that would be fine. They said we didn't have to do the whole song, so do you guys wanna try that?

Alyssa: Sure.

Now that Alyssa has returned, the group dynamics are a bit awkward and uneasy. For two rehearsals, Rachel has been the leader but is unsure of her role with Alyssa's return. Emily plays the recording and Alyssa plays along softly. Others finger along and blow silently on their instruments. The song ends, and Alyssa and Rachel converse more about the form and what they should do next.

They end up listening to the recording, with some noodling along. Alyssa points out the things she needs clarified, and Rachel again talks her through what they have worked out in her absence. When the recording ends, they play together without it, starting at a much slower tempo. Stopping after a chorus, Rachel says to Alyssa, "You skipped the second chorus" and laughs, adding, "We slowed down a lot." Alyssa advocates, "For now let's work on getting it together and then we can work on tempo."

Rachel then hints that the melody line is not solid, so Alyssa and Tori work through the melody while the others wait. Alyssa noodles with the recording until she gets it, while Tori, who has still not learned it, watches and listens. The group begins playing the song from the beginning without the recording. Alyssa plays more solidly but it is unclear if Tori is playing. The melody gets a beat off from the bass part and they stop. Haley assesses, "You guys started too soon or something," and Rachel responds, "Yeah, but the chorus started before we finished our chords . . . We might have slowed down cuz we like to take some liberty." They all laugh, then Alyssa and Rachel converse again about the form and transitions.

Rachel leaves to take a test in another class. The others fill out reflection sheets and discuss random things. Prompted by the reflection form, Tori asks, “What is the form?” and Alyssa tells her. I walk in and ask how they feel about where they are with the song. Alyssa responds,

I feel pretty good about it. I mean I feel like there's a lot more we could do with the song, but like given that we have so little time and there's a week in between every time we meet, like there's only so much we can actually do.

They discuss the confusion about the form for a few more seconds. More silence commences, then individual playing until Emily begins the recording again. They noodle on instruments, talk, and laugh intermittently as the recording plays. When it ends, Emily says, “I'm not gonna be able to listen to this song on the radio anymore!” Alyssa responds, “I know! I used to like this song once upon a time!” They all laugh. They attempt a couple more run throughs, stopping once because they slowed down and once because they are unsure about the form. Some laughter ensues, then an initial discussion about how to end the song. Without resolving that issue, they return to discussing the form. Realizing there are only three minutes before the bell, they pack up quickly and leave.

11-23 Practice Performance

The five members begin rehearsal by playing the song without the recording but stop before the end. Alyssa clarifies, “It goes verse, verse . . . Let's do that again!” and she laughs. Prompted by Rachel's question about tempo, Alyssa assesses, “I felt like it was good. It wasn't too fast,” singing too slow and too fast to show that their tempo was neither. The second try gels better and everyone seems quite confident on their parts, including Tori. (I notice that they are still not in tune.) They are less solid as they

approach the end, but only fall apart close to the end. Alyssa suggests, “Ok, at the chorus (sings it), we always go down to the lower note. That one part goes . . .” She plays it on her flute. They do not have time to run it completely again before it is time to perform in front of two other groups.

In performance, they sit from stage right in a horseshoe shape in order: Alyssa (flute), Tori (oboe), Emily (bass clarinet), Haley (flute), and Rachel (bassoon). Not quite sure what to say, Rachel introduces the group and their song. The two bass players start as planned, with the woodwinds entering on the melody. Using no music, but looking only at each other, they play vcvcc as previously discussed. Everyone seems to have learned their parts, even Tori. Haley splits off to play the background vocals by herself, which works nicely. Alyssa rushes the tempo but everyone seems to be following her. As they play, they seem to be making eye contact and use facial gestures to send nonverbal signals. The closer they get to the end, the shakier it gets. Because they have not worked out the ending solidly, they all seem to take cues from Alyssa as to where and how to end, holding out a tonic whole note in unison. The group had ten minutes to rehearse after the performance practice session.

During the practice performance, all of the members from the other two groups who were in the room listening wrote compliments and suggestions for the group about their performances using the feedback forms I provided them (Appendix K). I also wrote comments using the feedback form. When the members of the Abyss finished the performance, several of their peers and I told them some of the comments we wrote on our feedback forms for them. After the performance, the members of the Abyss collected their feedback forms from their peers and myself. They had about ten minutes alone with

their group members to review the forms and address the comments as they chose. I do not have data for that session.

Session 6

I passed out reflection sheets for that day at the beginning of class instead of closer to the end, as I usually did, because I provided a checklist for them to go through in preparation for their performance. The group members, all present, start class by looking at their reflection sheets and discussing how they want to sit when they perform. Once they arrange themselves (Rachel, Emily, Tori, Alyssa, Haley from stage right), Alyssa asserts, "Ok, a couple things we need to figure out. Who is introducing?" Tori suggests Rachel, who agrees and then practices her introduction. Alyssa then directs Haley to lead their exit from the stage.

Next Alyssa asks, "What are we going to wear?" but they get sidetracked discussing how they will end the song. Rachel begins, "So do you wanna end it just like on a chord and then just hold out a chord . . . unless you think something else." Alyssa responds, "Or we could figure out the notes for like (sings a descending "rolling in the deep" holding out the note on "deep," then sings ascending "rolling in the deep")." They all laugh and discuss wardrobe for a few minutes, Alyssa ending with, "We should all wear some form of red, white or pink with black pants." The conversation goes on longer but ends without a solid agreement.

After about a minute of random playing, Alyssa suggests they run the song, but they have problems as Alyssa pushes the tempo. (No one mentions the out-of-tune playing I hear.) Mostly Rachel and Alyssa converse back and forth with Tori and Haley interjecting questions; Emily's voice is not apparent. Finally Alyssa and Rachel agree on

the form (intro vcvcc end) then Rachel assesses the tempo, “It slowed down a lot.”

Alyssa adds, “So listen to Rachel.”

Rachel asks, “Can we find what that C chord at the end is? Cuz we could just hold out that chord.” They spend the next ten minutes working on the chord. Emily and Rachel use the transposition chart to figure out Emily’s notes. Haley, Emily, and Tori wait while Alyssa and Rachel discuss the chord, Alyssa suggests they all pick a note and “try Eb major . . . Eb, G, Bb.” Then Alyssa asks, “What is the relative minor of Eb?” They think about it. Rachel spells out some notes and comes up with, “C!” Finally in an “aha” moment, Alyssa agrees, “It’s C! That’s why it works! That’s why she ends on a C! Ok, so let’s try!” They play the chord. To me, the notes sound correct but not balanced.

As Mr. James (Nick, the teacher) walks in, Alyssa asks him, “Do you think you can help us real quick?” and explains the problem. After they play that section ending with the chord in question, he asks each person, “What note are you playing?” then directs each person what note to play for better balance. After trying it, Alyssa confirms, “That sounds better, for sure.” Mr. James encourages, “It’s the right chord. You just needed to find the right spelling of it, like who plays what part.” They thank him and he leaves. The next order of business is to figure out how to get into that chord. They each noodle around for a few seconds. Finally Alyssa and Rachel play together. They all agree that that works, though Emily, Tori, and Haley did not play with them.

Tori asks, “Do you have a tuner?” Rachel offers hers, as Alyssa suggests, “That might help us!” They all laugh. As in large ensemble, they all take a turn to tune with the tuner, adjusting their instruments accordingly.

Finally, everyone plays starting at the last chorus and ending together, though it is not completely solid. (It does sound better in tune now.) Rachel celebrates, “Yay, we can end our song!” Alyssa proposes, “Okie doke, let's try it again . . . Make sure it wasn't just luck.” They play the same section again and fizzle out again. Rachel redirects, “So, do you wanna do the entire thing? We should go through our checklist!” They get their reflection sheets I asked them to fill out, each person reading different things aloud and checking them off: “We have practiced playing through our song enough times that we feel confident playing it all the way through. We have practiced exiting the stage. We have planned what we will wear to perform.”

Alyssa asserts, “I think we should do a whole run where Rachel talks to the camera.” Tori giggles. As they get ready to play, Alyssa decides that they will do a “horns up” together, following Rachel’s lead, and all agree. They do this and then begin playing, stopping in the middle when Tori cracks a note. She starts laughing and can’t stop, laughter erupting from the entire group. Alyssa says, “If it happens during the performance, Emily, just start jamming.” Tori is still laughing and has to gather herself first before they begin again. They play through the whole song and end together. Immediately Alyssa and Rachel assess the last chord. Alyssa suggests they “just need to rep it a couple more times.” All smiles, the group members seem happy with what they are accomplishing.

Finally, the group practices “the full *full* run through,” with entrances and introductions. I walk in right before they begin playing. They almost fall apart toward the end but recover, thanks to Alyssa’s unwavering resolve to make it to the end. Alyssa assesses that “the last chorus we play twice.” They laugh at their miscommunication.

Rachel assesses, “Something happened where we got off, but we fixed it. We actually held the tempo,” and Alyssa reviews the form once more. Rachel suggests that they want feedback from me, so I tell them my thoughts, essentially reiterating what they had just said themselves before I leave.

They noodle and talk randomly for a few seconds. Alyssa suddenly says “Hey!” and plays C, G, high C in a rhythmic pattern at the end (a new twist on the tonic chord). Rachel asks about the notes, so Alyssa tells the others what to play in concert pitch. Everyone plays together except Emily, still unsure what her notes should be. The transposition chart does not seem to help. Rachel and Alyssa hold their C (which Emily matches) and then their G (which she cannot seem to match). When they do not know what else to do to help, Alyssa says to the whole group, “Ok, just play the C thingy.” Rachel suggests that they “try playing the whole thing” with their new rhythmic ending, and they are fairly successful.

Random noodling occurs, as they individually work out their own problem areas. Rachel clarifies that Alyssa is cutting them off at the end. They attempt a couple more repetitions starting at the last chorus, each time sounding more solid. When Haley misses the top note, Alyssa spoon-feeds the notes to her: “Play C.” “G.” “C.” Haley plays each note, ending with high C. Alyssa jokes, “Voila! No other notes!” as they all laugh together. Tori points out that the bell is about to ring, so they rush to finish their reflection sheets, reviewing the song’s structure and answering other questions. Alyssa ends with, “Do we want to meet 5 minutes early and go over it tomorrow?” They agree, and as they walk out of the room, Alyssa finalizes what they should wear.

Final Performance

Entering the stage as planned, the members of The Abyss follow Haley. As they get seated in a semi-circle, Rachel announces them, then they are off. The bass line enters and the winds two measures after them. No one is looking at music. Alyssa is loudest and does not look anyone else in the eye. The others seem to be taking cues from her. Alyssa rushes against the bass players, who skip beats to catch up to her. In the chorus sections, Haley splits off to play the background vocals, leaving Alyssa and Tori to play the melody. As they transition from the chorus into verse 2, Alyssa jumps some rests, throwing off the bass players, but they recover. Verse 2 and the next chorus come and go with no problems, but in the transition from the chorus to the repeat of the chorus, Alyssa again skips some rests and the others have no choice but to follow her. As they approach the end Emily and Rachel look at Alyssa, who looks back and conducts some cues for the ending with her flute. Everyone is attuned to what she is doing and they end confidently with the rhythmic pattern Alyssa created. Emily plays the rhythm correctly but she clearly plays softer because she has still not figured out the correct notes. After they end together, Alyssa stands, the others follow suit, then Alyssa nods to Rachel and they exit the way they entered.

The Beatles' "Revolution" (The Beats)

Getting to Know the Members of The Beats

Shannon. Shannon, a 15-year-old sophomore, has participated in marching band both this and last year. Last year she was in concert band and auditioned into symphonic band this year. Shannon played violin in orchestra for two years in fourth and fifth grades, laughs and explains that she "just didn't really have the patience to deal with

string instruments.” She began saxophone “like half way through fifth grade [by] taking private lessons [but] wasn't in an actual band class until 6th grade.” She has continued because she likes the family aspect of band: “We can trust each other. It’s my home away from home. It’s my safe spot.” She describes Mr. James as “like all of our second fathers at once. He can be the good father or the bad father depending on his mood.” Shannon finds band frustrating because she “[doesn’t] get the music” sometimes, admitting, “this is my first year in symphonic band and I'm still not as good, but I do try.”

Chris. Chris, a junior, plays euphonium in both marching and symphonic bands. Last year he also started learning to play trombone on his own. Before he joined band seven years ago as a fifth grader, Chris was in choir, “but when it came time to choose, I picked band.” Clayton also likes the family atmosphere of the program saying, “We've made it so that it seems like we're family. We're always there to support each other.” Clayton dislikes “when people don't focus. They don't try to get on task. They just go out in to ‘la la land’ instead of focusing and getting their part down . . . they're always messing up.”

Kayla. A 16-year-old junior, Kayla has been playing clarinet since fifth grade, and currently plays in marching and symphonic bands. She has been playing piano since first grade, has participated in elementary school choir and played violin in fourth-grade beginning orchestra. Kayla likes the challenge that band offers: “I wanna be challenged to play the music cuz I really had been challenged up through middle school.” However, she also gets frustrated: “Sometimes it's like, ‘Ugh, I can't get this music!’ Or somebody can't get this music and it's frustrating to see that and then try to help them and then they not take the advice. I don't like that (laughs).” She also enjoys the family dynamic of the

band culture. “You get to know everybody. It's like little cliques that you can find around school and if you need to go to somebody for advice, there's somebody in the band who will help you.” Sometimes Kayla does not like the time and commitment level that being involved in the band program requires.

I guess the frustrating [thing is], it's not actually band. It's the other things that I do in my life. There's a lot of conflicts that come up and sometimes people aren't as flexible as they can be, cuz I'm in swim and [there are a lot of times] where it's like I need to go to that but I also have to go to this.

Brittney. Brittney is a 16-year-old junior as well who joined band her freshman year. She “definitely started out as an orchestra kid,” playing violin from fourth grade until her freshman year when she was in the chamber orchestra, the top orchestra at MHS. When it came time to choose between symphonic band and chamber orchestra, “one of them had to go” because both meet at the same time. Brittney started the band program by playing trumpet in marching band but switched to French horn last semester. She still plays other instruments occasionally as well: “I still play [trumpet] on occasion, and violin, obviously . . . and cello,” explaining that she picked up cello on her own during eighth grade. Now her primary instrument is French horn.

Brittney likes the “dynamic and the culture of our band program here better than the orchestra program,” believing that “it’s safe and there [are] clear goals and everyone is in the same mind set as well [and] that moves us forward as a program.” She feels that character development is emphasized in the band program “and that's really important. Being in this band program is like taking a class on being a better person.” The time commitment involved in being in band is not always ideal for Brittney, though she realizes “it's a choice we made and it has to become a priority.” Though she also enjoys

the challenge of the music, she says it can sometimes be overwhelming, “like it's over your head and it's impossible to get.”

Clayton. Clayton is a 16-year-old junior who plays trumpet in the symphonic band. He is not in marching band this year, though he has been in previous years. Clayton started playing trumpet in fifth-grade beginning band, and before that, he sang in choir: “I really like choir. I was in it in fifth grade and middle school, but then I came to high school and like, I didn't have time, so [I chose] band. But I'm hoping to be in choir next year” in addition to symphonic band. In addition to accomplishing his goals of improving his trumpet-playing ability and making it into the symphonic band, he has also been able to get over his “really bad stage fright.” Clayton thinks that learning music should be the major focus of band, and he does not like when non-music related issues interfere with the music-learning process:

We're a big group and sometimes there's in-fighting and stuff like that, that is totally unrelated to the goal of band and to the music we're playing. A lot of stupid stuff can happen sometimes, just people bickering and so on and that just really annoys me when that happens.

Choosing Groups

When I talked to The Beats about how they chose a group, they all laughed nervously. Brittney explained:

Um, I'll take a small bit of credit for this. I was like "we should get together" (looks at Kayla), and I was like I want Clayton and I was like I want Shannon, and Chris approached me and was like, “Can I join your group?” and I was like, “Yes, perfect!”

The others nodded and did not expound on her answer. Shannon later admitted that she was “just kind of thrown into the group cuz I didn't have a group originally.” She said

Brittney asked if she was in a group, to which she said, “No, I kind of need one.” So then Brittney asked if she wanted to be in her group, and she “trusted Brittney.”

Nick shared his perspective on this group’s dynamics: Brittney and Kayla claimed to be “best friends” some days, but mostly it was that their families are very close, so they “sort of are forced to be friends.” Brittney and Clayton had previously “gone out” together. (Therefore it is probable that Brittney actually only wanted Kayla and Clayton, though she needed Shannon to fill out the group.) Chris gave no commentary on how he ended up in their group.

Session 1

The Beats took the entire class time during Session 1 and a little time during Session 2 to settle on a song. Brittney brought her phone so the group could listen to different songs. Clayton voiced his opinion that he wanted to do a Beatles song. They discussed and listened to several Beatles and non-Beatles songs including “Party Rock,” “Pumped Up Kicks,” “Revolution,” and “All You Need is Love,” among others, and ultimately decided on “Revolution.” Both Chris and Shannon were unfamiliar with the Beatles song but did not voice their opinions or offer any other song suggestions. Kayla was absent that day.

Shannon later admitted that she was not excited about the song: “I only knew two other Beatles songs but not this one. I was like, ‘I refuse to listen to it cuz my uncle listens to it all the time.’” Later she added, “My mom got an earful at the beginning of the project because I didn't want to do the Beatles and I hate the Beatles songs and why do I have to do this!?” Chris said he had “heard [“Revolution”] a couple of times but I didn't know what it was really about at all.” Chris said he “couldn't bring [any song choices] in

so much because I didn't have [a device] to bring them in with, so I was stuck with whatever they had.”

Session 2

Brittney starts the session by listing off the titles of the songs they had listened to the previous session, telling Kayla that they had decided on “Revolution.” Kayla asks, “So I guess the first thing we need to talk about is, who's doing what parts?” Brittney asks, “How do you guys feel about passing it around?” Clayton and Kayla agree that may be a good idea. The three of them discuss possibilities for each person playing the melody at some point. Brittney and Kayla agree, then leave to get paper and pencil. Shannon sits and sips her water, and Chris says nothing.

When they come back, Brittney says, “Let’s learn the vocal part today.” Kayla asks, “Do we want to all switch around?” The three discuss this further but do not decide. Brittney, wanting to get down to learning parts, compares the process of learning parts to Guitar Hero:

Ok, so I don't know if you've ever been to it but like when you want to break down a song on Guitar Hero, it breaks it down, like "verse 1", like "bridge A" "chorus 1, chorus 3." Do we want to kind of break it up like that, like “Oh, something changed, like let's call this part 1” and then be like, “Part 1 has this part, this part, and we want this verse and this verse.” Do we want to kind of do that?

Clayton counters with, “I think, like, if we just start it basic, because the main melody (sings some notes) repeats itself several times and we could each do one of them.” When Brittney agrees, he adds, “I know the notes. I'm in the right key. It seems to be in the key of E-flat at the beginning, but . . .” They converse about whether it modulates, but without conclusion, Clayton finally suggests, “Do you want to just flub around with the music? At least one time. What's the worst that could happen? We're not

gonna judge each other.” So then Clayton “flubs around” to learn a part. Brittney searches for the song on Youtube on her phone, which is plugged into portable speakers. Once she finally finds it, they attempt to play the melody along with the recording, getting some of the notes right. They stop and listen when it gets to the guitar solo. (From the audio recordings of this session, I cannot tell if everyone is participating, but at least Kayla, Clayton, and Brittney are playing.) When the verse and chorus enter after the solo, they play along again.

Once the song ends, Clayton strategizes,

So we were just messing around. Do you wanna just break down the melody? (sings:) “You say you want a revolution” You wanna just break that down? And we need to have our slight variations of it. It doesn't have to be exactly the stuff each time we play it. It can be a slight variation on it.

Clayton asks the group, “Did you get it?” Brittney answers for the group, “Yeah, I think everyone got it.” Then she looks at Shannon who says nothing. As Clayton and Brittney discuss what to do next, Kayla “flubs around” on her clarinet, attempting to come up with her own “version” of the melody.

I walk in and distribute reflection forms at this point. All group members immediately begin filling them out and discussing their pseudonyms as prompted by the reflection form. After a moment, Brittney decides they should do that later and get back to learning the parts. There is some disagreement about how to proceed:

Kayla: I need to listen to it a couple more times.

Brittney: Yeah. Do you wanna stare at the reflection forms and listen to one more time?

Clayton: No, I wanna play.

Brittney (in a joking manner): Yeah, Clayton's like, “I've been doing this for a long time!”

Clayton: It's only been one week.

Kayla to Clayton: You're two steps ahead of me. You've listened to the song and you know parts of it (laughs). You knew about the song last week!

Brittney: Do you wanna listen to it again and listen to a different part? I'm gonna listen to the bass line.

Kayla: Yeah, dissect a part this time.

Clayton: Well I say we should . . . (The recording starts playing before he finishes his sentence.) Whatever. We'll listen to it. (He hums along with the singer).

They listen to the entire song. As they listen, Kayla comments on parts she likes and may want to play. When it ends, there is more strategizing about what to do next:

Clayton: Ok, you wanna just work on the melody, or what do we want to work on as a group right now?

Brittney: Do you wanna do one run-through on the part you just dissected, trying to playing that and then we'll go back to working on the melody?

Kayla: I think we should work on the melody because that part I'm gonna have to listen to again, multiple times, to dissect it from the rest of the thing.

Brittney: Ok, so one more time on melody?

Clayton: Let's do it once without that, just (sings the melody).

Brittney: Ok I'll play it till it comes in the first time so we can hear it one more time cuz I wasn't listening to that part at all that time.

Brittney plays the recording again. Though this is not what Clayton wants to do, he goes along, listening carefully to the phrases within the melody, saying, "Ok, yeah, it comes in again on two of the next few measures. It's kind of odd that it's not a space between. But anyway, let's just do the first one," then Clayton sings the first part of the first phrase. Brittney stops the recording, Clayton plays and holds the first pitch to the first phrase, and the others try to match his pitch on their instruments. They do this for each note in the phrase. Brittney, wanting to write down what they have learned asks Clayton to "give

me the notes in concert pitch” Kayla starts listing the notes she played on her clarinet: “F, B-flat,” and Brittney writes them down. (It is unclear whether Kayla and Clayton are giving Brittney concert pitches or the pitches for their instruments.) This continues for several minutes. Shannon and Chris are silent.

Once Kayla, Clayton, and Brittney get done with the phrases for verse 1, Kayla asks, “And that just repeats through the whole song, right?” Clayton confirms, “Yeah, at different points,” and Kayla says, “I’m gonna have to write that down.” They agree that they should all memorize the melody, and Kayla says, “I’m gonna fall asleep to this song every night till I have it ridiculously memorized!” Clayton advises that they “practice so we don’t look stupid [in the performance].”

On her French horn, Brittney begins to play the notes that Clayton and Kayla have dictated to her, and the three deliberate about the pitches. Though they realize there are transposition problems, they do not resolve them. Brittney suggests, “Ok, do you want to all try playing through it together?” She asks, “How fast?”, then snaps off a slower tempo than the recording, sings the opening line, and counts them off. I hear horn, trumpet, and clarinet. Are Shannon and Chris playing? The group plays through the opening phrase, stops, and Brittney, Kayla, and Clayton discuss the tempo. Though they do not come to a consensus, they play through the whole opening phrase again at the same tempo. Clayton asks, “Got that alright?” Brittney says, “Nope,” so Kayla asks, “Wanna just go through that again later?” Without allowing Brittney to answer, Clayton suggests they move on to “the next verse.” Kayla noodles on her instrument and asks, “So we can like jazz this up, right? Cuz I’m totally not [playing exactly what they are playing].” Clayton and Brittney agree, “Oh yeah!”

Brittney starts the recording and they play along, Clayton and Kayla getting most notes correct. A lot of Brittney's notes do not sound right. I do not hear the baritone or alto sax. After they play the opening phrase twice, they stop playing but let the recording continue. Brittney and Clayton discuss the section they have just played while Kayla practices a new part on her own. After a moment, Brittney stops the recording and asks, "Do you wanna just do it from the beginning again?" Clayton begins, "I say we should . . ." Then the recording starts playing and he succumbs, "Ok" and puts up his trumpet. As all of the group members attempt to play along to the recording, Kayla attempts a little improvisation during the guitar solo section. They let the entire recording play and each person "flubs around" throughout, attempting what they can and working out more notes. When the song ends, they make funny comments about the music, such as "I've got dibs on the yelling at the end!" and laugh.

At Clayton's suggestion, they discuss the questions on the reflection forms and fill them out. Clayton, Brittney, and Kayla continue to throw out ideas for how to split up the parts. Kayla asserts that she wants to learn the guitar solo part and the piano part, and asks if Shannon wants to learn the piano part with her. Shannon quietly answers, "Sure." Brittney wants to learn "the fancy guitar part and the bass line." They continue this discussion until the bell rings.

Session 3

The Beats conducted their previous sessions in a small practice room, but because I was having a difficult time getting all of them on video and because their workspace was quite small, I moved them to the band room for the remainder of the project.

As the session begins, all of the group members are sitting at a table at the front of the room; Clayton (trumpet) is buzzing on his mouthpiece and the others are silently listening to the recording. The session continues in the same fashion as the last one with Brittney (French horn) and Clayton throwing out suggestions about what to do, and Kayla (clarinet) exerting her thoughts. Shannon (alto saxophone) and Chris (euphonium) continue to be silent, waiting for the other three to tell them what to play. They listen to the song a lot in this session. Also in this session, Kayla, Clayton, and Brittney start the process of playing a phrase and writing it down. At one point, Kayla asks Shannon what she wants to play, she tells them to “just assign me” a part. Brittney, Clayton, and Kayla assign parts, focusing now on Shannon and Chris, who do not protest or add anything to the conversation.

Session 4

The Beats start this session with different group members attempting to play the melody along with the recording at different times, making it largely undecipherable to my ears. At the guitar solo section, Kayla plays a lot of very fast notes (it appears that she has spent some extra time creating her own rendition). Even though the group members miss notes and entrances, they continue to play to the end of the recording, then Brittney assesses, “So it kinda falls apart at the end . . . or mostly everywhere.” Clayton asks, “So does everyone know how the main line goes? (sings the melody of the first verse). And we know when to play that?” Shannon and Chris mumble something. Kayla says, “I don’t play the melody.” Clayton asks Kayla and Shannon if they are ready to play “the solo thingy.” Shannon responds with, “I have the notes but it’s not ready.” Clayton suggests that they meet together as a group outside of class because “I don’t want to be

ridiculously embarrassed for this, you know.” Others agree, but they do not solidify a time.

Again, like previous sessions, Clayton and Brittney run the rehearsal, Kayla has input, and the other two do not respond much. Important in this session is that Clayton asks the group, “Is it too complicated to keep switching around parts?” Kayla and Brittney say yes, so the three assign specific parts for everyone. Brittney and Chris will now play the bass, Kayla and Shannon will play the guitar and piano parts, and Clayton will play the melody.

During the end of this session, prompted by the reflection form, they discuss how much they practice outside of class for the project. Brittney, laughing, says, “Kayla and I listen to it every time we get in the car together!”

I walk by at one point and ask them, “How’s it going? On a scale of 1-10, how ready do you feel?” Shannon says, “1,” Clayton adds, “As a group? Um, 4 or 5 probably, realistically.” Brittney answers, “as a person, about 5,” Kayla says, “Not exactly ready,” and Clayton says, “Myself, a 7.” They express a need for more time, perhaps another week, to get it together. I leave as Clayton asks the group, “Wanna do it slow?”

Kayla tries to help Shannon more in depth in this session by playing a note and having Shannon match it. This is the first time they have tried this, and Shannon is actually able to get some of the notes this way. (It is unclear as to whether she has actually played any correct pitches up to this point). Kayla encourages, “There we go! Hey hey!!” They laugh, and Shannon says with relief, “Why didn’t we figure that out like 400 days ago?!”

As class comes to an end, Clayton attempts to discuss a problematic rhythmic issue with the group, but he is unable to clearly state the problem. Brittney articulates it a bit more concisely: “It’s cuz there’s a 2/4 bar there” (most of the song is in 4/4). Clayton asks, “Should we skip that?” Brittney declares, “We’ll see. That’s a group rehearsal thing. If everyone skips it, then everyone skips it.” Brittney and Clayton discuss meeting outside of class, deciding on next Tuesday after school. Kayla and Shannon continue working out Shannon’s part till the end of class.

Session 5

At the beginning of class, Clayton and Chris are playing long tones, Kayla and Brittney are chatting, and Shannon is sitting silently. Clayton and Kayla start practicing their parts individually, then Shannon finally begins warming up. Clayton wants to “play it from the beginning” but Brittney wants to “listen to the song first.” Without listening to it, they begin playing without the recording. Though they miss notes, they seem to have a better grasp of their parts and how they fit together. Falling apart after verse 2, they stop. Clayton and Brittney assess what went wrong and strategize what to do next. Kayla expresses that she is unsure of the solo section so Brittney, trying to help, suggests she “play the slide part.” There is a lull, Kayla practices her solo, then Clayton suggests they “try from the beginning again and just try to not stop.” They play without the recording again, Kayla playing during the solo section while Brittney plays an accompanying part. They stop, the three of them discuss the section but without resolution, then there is a lull.

They begin looking at their reflection forms and, prompted by a reflection question, Brittney asks, “Are we just playing the whole song? We’re ok with that?” For the first time, they discuss the form: whether to play two or three verses and allowing

Kayla to “put [her] signature on” the solo. A voice on the intercom announces students to take club pictures, and Clayton and Brittney leave along with other band students. Kayla, Shannon, and Chris start filling out reflection forms in silence, then listen to the recording. They do not play at all the whole time that Brittney and Clayton are gone. From a distance, I see that they are stalled so I walk over and ask what they are working on. Shannon says, “I don’t know. A good half of our group’s gone” and laughs. I ask questions, hoping to involve them in a conversation with each other but that does not happen. Saying that I will let them get back to work, I walk away and they go back to listening to the recording and filling out reflection forms.

After 15 minutes, Brittney returns. Kayla, who has been streaming a different version of the song, says to her, “We’re not playing in the same key as this song. It’s like a half step lower.” The three girls determine that they are “not changing it” even though they think “Clayton’s playing in the original key.” They discuss a question on the reflection form asking what would make the project better for them: Brittney suggests they record themselves; Kayla thinks they need “more people, like instrument variation.” As Clayton walks in, Kayla tells him and Brittney that they did not get much done “without our chief.” Clayton suggests they play it again but the two girls ignore him. The group continues random conversation for a few minutes. Finally, they attempt to play three more times but do not get to the end. After the third time, there is a lull, then they try again without discussing any specific strategy of what to fix. The bell rings, so as they put their things away, Clayton assesses, “That was better,” and Brittney agrees. (During this session, they acknowledge there are problems with Kayla’s solo section, Brittney’s notes, and where to end, though they still have not figured out how to solve these issues.

Also they have not addressed the problems Shannon and Chris are having with their parts.)

11-23 Practice Performance

Brittney (French horn) and Clayton (trumpet) are absent. Kayla (clarinet) assumes the role of leader. Chris (euphonium) frequently chimes in, but Shannon (alto saxophone) continues to stay quiet. This excerpt depicts how most of this rehearsal goes:

Kayla: Um, (sounds defeated). We need to actually go back to the (sings a part), wait, and then . . . yeah . . .

Shannon: Cuz there's no point in having the second guitar part if there's no vocal.

Chris: Yeah.

Kayla: True that (laughs). This is four verses! It's just (sings her two note guitar part) (laughs) (and sings Chris's bass line) Oh no!

Chris: Yeah.

Kayla: Well, I'll play second. Can you cover the first guitar part?

Shannon: The only one I know?

Kayla: Yeah, could you play it through the whole thing?

Shannon: Potentially.

Kayla: Ok, cuz I can jazz it up with the guitar part (laughs). Um . . . Of all the days! The one performance day!

Chris: They both decided to bail on us.

Clearly stressed, Kayla is making a lot of vocal noises like ummmm, aaaahhhh, oooooohhh. She finally decides:

Um, we'll just get through what we can. We can't embarrass ourselves because it's not our fault. I mean, cuz we need the vocals. I mean we know our parts, we were assigned our parts, we know our parts, but we need to have them. It's not like they're written on paper so we can display them. Without the vocal line you know, we're kinda lost a little bit, cuz that's when I know where to change. Anyways, it will be interesting. Um . . .

She practices her own parts by herself. They discuss how they think some of the other parts go but are unable to learn them and put them together in this ten-minute rehearsal. Chris asks, “You wanna just do the first verse and end there?” “Yes,” Kayla says, adding, “I’m not playing the solo today.” She practices the section they have discussed and adds, “And that’s the end of the first verse. I just have to get there.” With no time for a run through, it is time for them to play their practice performance for two other groups.

In the performance, Kayla and Shannon stay together pretty well. Chris plays some wrong pitches but in the correct rhythm. They are together for most of it, looking to Kayla for guidance, as she is the strongest player and oldest person in the group. She plays enough background parts that the other two seem to know where to play. They fizzle out, ending somewhere after the first verse. All are embarrassed, though it seems Kayla is the most disconcerted of the three. Like all groups after the practice performance, they had a few minutes at the end of class to discuss the written feedback they received.

Session 6

Clayton and Brittney are back this week. Brittney is looking through the peer and teacher comment sheets from the practice performance. Kayla warms up on scales. Prompted by the reflection form I handed out at the beginning of class, they begin talking about whether they will stand or sit on stage and in what order. Clayton wants to stand and Brittney wants to sit. Kayla admits, “I’d really rather not do the solo, so could we just do all three of the verses?” Clayton approves and adds, “Yeah, the chorus and the verses.” He and Kayla restructure the song and Kayla strategizes, “We need to go over our parts. The bass part was a confidence issue,” as she assessed from the peer feedback.

After more performance setup discussion, Clayton says, “Let’s start playing.” They start from the beginning all together and stop after the first phrase of the first verse. (The 2/4 measure within this 4/4 song is still an issue because they are not able to clearly decipher that this is what is happening and consequently, they do not seem to know how to solve the problem.) Brittney tells Clayton to “just do what you do and we’ll follow.” They start the song and get farther, stopping during the first chorus. Clayton and Kayla discuss a problem with phrasing, seeming to resolve it then they attempt to play it a couple more times.

Kayla and Clayton discuss who will play the “first guitar” and “second guitar” parts while Brittney practices on her own. Shannon and Chris sit and wait to be told what to do. The group plays a couple of run throughs. Brittney assesses, “Ok, the bass line is missing.” After a short lull, Brittney more specifically tells Chris that he needs to learn where the bass line changes. For the first time, in addition to pointing to problems, she helps him. She sings, then explains that “it changes right in the middle of it.” Brittney begins to help Chris, playing a long low note while Chris noodles to match it. They continue in this manner, and she is encouraged when he gets some notes correct. Clayton joins in, attempting to help make Chris’s part more playable. The three work together for about three minutes while Kayla practices by herself. Shannon is silent.

Once Brittney feels that Chris has solidified some of the bass notes, she tells Clayton what she will play for the third verse. Flippantly he approves, and they move on to discuss how many times they will repeat the “Alright” motive to end their arrangement. Brittney asks, “Ok, does everyone know their notes for (sings ‘jazz hands’ in the rhythm of the phrase they are all going to play end of the song)?” After some

individual practice, Brittney attempts to bring them back together and explain what she means by doing “jazz hands” at the end. This is the first time they have discussed the ending.

Brittney: Ok, do you wanna just give like some kind of head nod cue for when we're gonna do the, I call it, “jazz hands”?

Clayton: Should we do that?

Kayla: Are we doing jazz hands?

Brittney: That's how the song ends.

Clayton: How are you supposed to play?

Brittney: No no, it's called “jazz hands” cuz that's what choir people do when they go (sings that two-note progression that they were just playing for the end of the song). You don't actually do jazz hands. You just play it.

Kayla: I need both my hands.

Brittney: Noooo, it's just what that sequence of notes is called.

Clayton, still either not understanding or choosing to reject the idea, finally says, “Ok, we need to solidify the end.” So the three discuss how many times they will play the repeating “Alright” motive before they do the “jazz hands thing.” What are Shannon and Chris doing? They all begin playing at the third verse and when they get to the “Alright” motive, Clayton plays it four times, stops and says, “It doesn’t make sense, actually.” They discuss how many times to play it then decide “five times and sixth is jazz hands.” Next they decide they want the last note to be a chord and not unison, but no one knows what notes to play to create a chord. After attempting but failing to create what they want, Kayla, clearly frustrated, says, “Can we just play from the very beginning?” but Brittney and Clayton want to figure out the ending. Brittney brings back up the idea of “jazz hands” but Kayla declares, “We’re not dropping our hands!” Brittney explains again,

“[It’s like] dropping your hands and crescendo them up.” Kayla, finally figuring out what she means, summarizes, “Ok, it’s just ‘Baaaaah’ with a swell,” and Brittney says, “Yes.” They practice individually, working on the “jazz hands” concept and playing the “Alright” six times. They rehearse it again, sounding more confident, and I can hear all five voices playing.

Revisiting the reflection form, Clayton reiterates that he thinks they should stand. They take a vote, Clayton lobbying for standing and Kayla and Brittney lobbying for sitting. The others say nothing. Ultimately, they decide to sit. Not having much time left, Brittney declares they will “all wear jeans.” Clayton addresses the next thing on the reflection form, “Do we feel confident about this?” Brittney is “confident with [her] part.” Shannon says, “I’ll feel better as soon as this is done.” Clayton responds, “Aw, that’s not good. Let’s do it one more time.” But first, they revisit what to wear. Clayton leaves to go get some water, and when he returns, they talk randomly for about two minutes before running the song. The form, according to what they play this time, is now: intro, verse, chorus, verse, chorus, verse, end. As they begin the third verse, Clayton stops them short, realizing they are off by two beats. Without providing a solution, he discusses the form, suggesting they do “two verses . . . because we’re just repeating the same thing over and over again.” They all agree, “Two verses followed by the end.” They do not run it again but continue filling out reflection forms and chatting until the bell rings.

Final Performance

As The Beats approach the stage, Clayton announces enthusiastically, “Ladies and gentlemen: The Beatles!” then says, “That’s when y’all are supposed to scream and cheer.” The audience dutifully screams and cheers. The other group members take their

seats sitting from stage right Chris, Brittney, Clayton, Kayla, then Shannon. They all are focused on Clayton, who gives a breath cue and they begin playing. Clayton and Kayla (and maybe Shannon?) play the opening motive on different notes creating an interval of a perfect fifth. Then Brittney and Chris enter on the bass part as planned. Kayla and Shannon split off and play a middle part together while Clayton plays the melody by himself. Shannon plays more this time than I have heard her play during any of the sessions. It sounds like Brittney has some missed notes, though it could also be due to instrumentation: she is playing a guitar part on French horn. All of the group members seem to be communicating non-verbally. Watching body language they stay together until Clayton attempts to play a third verse. No one follows him. He stops after three notes then they all look at each other awkwardly. Brittney looks at Kayla, who throws her hands up as if to say, “Well, I guess we’re done,” and they start laughing. The audience laughs then claps. Clayton looks annoyed and does not laugh. Chris and Shannon smile, then look at the others. They stand up and exit the stage.

Steely Dan’s “Rikki Don’t Lose that Number” (No Country For Old Men)

Getting to Know the Members of No Country for Old Men

David. David, currently a junior trombonist, was in concert band his freshman year and moved up to symphonic band his sophomore year. He likes being in the band because he feels like “this whole program is really strong and built together, you know. There aren’t any cracks.” He says being in band motivates him to “keep up. There’s no slacking off. We have to do what we’re assigned to do and that’s sort of put me in this position where I have to take responsibility.” It is really good for him, he says, because “it sort of transfers from class to class and from school to home and so I’m doing things I

never thought I'd do before, you know – keeping up good grades, playing well. It's all in this process, you know.” David was only involved in the project for the first four sessions because he moved to a different state in the middle of the semester.

Scott. Scott, a senior, has been playing trombone since seventh grade. He admitted that he initially joined band so that he would not have to take P.E., and “that's ironic because now I'm going into music production.” Prior to being in band, Scott's only school musical experience was in elementary school music class: “I played the recorder and hated it.” In addition to currently playing trombone in symphonic band, he plays baritone in marching band and has been in choir for two years, adding “and I regret not joining sooner.”

Scott enjoys going on band trips with his friends: “Going on tour was the most fun I ever had.” Scott also enjoys “being involved in a great band and the rehearsal environment. I love the craft of music so it's good to be able to hear that.” He admitted that if the band was not as good as they are, “I don't know if I'd stick with it. I wouldn't enjoy it as much. It'd feel like a chore.” The thing he enjoys least about band is “how much of the schedule it hogs up, marching band especially. I'm the kind of person who spends more time at school than at home because of extra-curriculars and a good amount of that is because of band.”

Jake. Jake's main instrument is percussion and, now a senior, he has been in the band for four years. He was in orchestra from fourth grade through middle school and switched to band his freshman year because “my brother was in marching band and I just did it too, and probably to get out of P.E. too (laughs).” Jake did not specify what he likes most about band, but what he likes least is traveling on long trips: “I don't like the really

long bus rides with no bathroom on the bus when you're just sitting there.” Currently Jake plays percussion in both orchestra and symphonic band, as well as clarinet in the concert band. He has a hearing impairment and his teachers wear a special device that transfers the sound to a device he wears on his ears. This allows him to understand them better. I did not use the assistive device because I was able to talk to him in close proximity in sessions and interviews. He did wear his hearing aid during group sessions. Because of his hearing impairment, however, Jake may have been more reserved in answering questions in interviews and in talking in sessions.

Cody. Cody, a senior trumpet player, joined orchestra in fourth grade and switched to band in fifth grade – the first year band was offered at his school. Cody explained why he joined band:

I kind of got forced into it cuz my sister's in band and then my parents are like, “You have to be in band. It looks good on college [applications].” So as soon as I was able to do band they're like, “Do band or orchestra or something.”

Cody was also in choir in elementary school and participated in choir his freshman year of high school but he quit, adding “I'm glad I don't go to choir [anymore].”

The thing he likes most about band is “the people.” He said, “Pretty much the one big thing I always look forward to is the tour, cuz those are like the best times cuz we usually go to different places. Like this year we're going to Anaheim.” Cody is also proud of the group’s accomplishments, and thinks it is cool that they get superior ratings when they compete. What he likes least about band is when the band director chooses music that he does not like: “If I don't like the songs, I really don't like coming to band. But if we get pretty cool songs, I’m like, ‘Yes! I get to play this!’” Cody added, “I don't like

music, like, I don't listen to it every day. I just go on with my day not listening to a single piece of music except being in band.”

Michael. Michael, a senior baritone saxophone player, went to an elementary school outside of the district and is one of the few students in the program who was able to join band in fourth grade instead of fifth. He started on clarinet, switching in fifth grade to alto saxophone. He moved to tenor saxophone in sixth grade, and finally to baritone sax in seventh grade. Michael recalled playing recorder and some guiro in elementary general music classes. He joined band because

I just got interested in it. Our teachers came in one time to music class and started talking about orchestra” when he was in third grade. Though he was never in orchestra, it got him interested in joining band.

Michael joined high school choir this year as well “and I wish I would have done it sooner.” He enjoys “the work ethic of all of this, to make the music the best it could be.” He takes pride in the fact “that we are a pretty great band and we've been congratulated for it with superiors and with distinctions at festival.” He thinks the dedication of his teacher is a big part of what makes band such a good program. However, when asked what he likes least about band, Michael said, “I just don't like, well, my instrumentation. On my instrument I usually play like whole notes and quarter notes. I really want a challenge.” Conceding that “I'm a big guy so I play a low instrument. Probably that's why they moved me,” adding that he thinks it is best for the ensemble if he continues to play bari sax.

Choosing Groups

When I asked how they chose their group members, Michael explained that Scott and Jake are friends. Cody said he knew Scott from sixth grade so he asked him if he

could be in their group. Scott added, “I think it was me and David and then me and Jake sort of grouped up, and then for Michael and Cody we were like, ‘Hey you guys wanna come?’ and like it worked.” Cody said, “We connected like Legos” and they all laugh. In the group interview, Jake and David did not comment on this question.

Session 1

No Country For Old Men, as they named themselves, are in a percussion storage room that has been cleaned out for this project. Despite sharing the space with the timpani and a piano, they have plenty of room to work. Jake (percussion) sits on the floor, even though there are enough chairs for everyone. Scott (trombone) walks around the room and seems to be leading the group as they decide on a song. I walk in after they had been working for about fifteen minutes and sit and listen. They are listening to “Rikki, Don’t Lose That Number” by Steely Dan. After a few minutes of deliberation, they decide to use this song as their piece. Scott says, “Maybe we could transcribe it,” but Jake counters with “It’d be more fun to just figure it out,” then Scott agrees with him. Next, Scott says, “I think right now, all I want to do today is figure out the key and the bass part cuz the bass part’s easy.” He sings fifths, depicting the bass line: “And that’s fifths. They always do fifths.”

After a lull in conversation, David (trombone) advocates, “You guys, for the days we’re not doing this, you guys have to go home and listen to the song and at least try to figure it out.” Cody (trumpet) says he cannot practice at his house because “it’s a death trap for anything valuable.” They discuss meeting outside of class but run into scheduling problems. Though no decision has been made about practicing outside of class, Scott begins strategizing again about whether they should work on key, bass line, or dividing of

parts. Ultimately the group decides to start learning the bass line. Michael plays and holds the two notes in the bass line and figures out that they are C# and G# on his baritone sax. Scott tries to sing the pitches to match what Michael is playing, then he and David noodle around on their instruments to match Michael. Though they do not finalize the notes or the key, they all figure out the bass line's rhythm. Michael writes it down. Seeing him, David suggests to everyone, "If you need to write something down, just go right ahead."

Scott then begins determining the key. He initially looks at the piano in the corner and says, "Alright then, so Db. We'll have to figure out what that is in a concert key again." He, David, and Cody search for the bass pitches on their trombones and trumpet, but they play mostly wrong notes and wrong intervals. Scott tells Michael, "Play your Db up an octave" on his baritone sax. Scott matches that pitch and says, "So something's telling me we just got the key: E-natural," then all group members play what they think is an E-natural for their instrument. Michael says, "Scott, I don't think it's concert E-natural. E-natural is a C-natural for me."

After a couple of minutes of noodling and discussion, Jake, who has not been playing but has been listening to their conversation up to this point, asks, "Should we play it again?" They listen to the recording again then further attempt to solidify the two bass notes for all group members by noodling around till they match. It seems that Scott has settled on "the key of E and the notes are basically root and fifth, so that's E and B-natural." David adds, "And it hits G#, I know that. So that's at least three sharps for sure." Cody still unsure, asks, "It's in the key of what?" and Scott again tells him, "E." They fill out their reflection forms for the next few minutes until class ends.

Session 2

David begins, “Ok, we’re not going to goof off this session, and when we’re listening to the music we have to be quiet.” Cody counters, “Hey, we didn’t goof off last time. We got the bass line and we figured out what key it is.” They do not seem to know where to start, all making suggestions about what to work on. Jake starts: “Ok, let’s listen to the music so that Scott can finish cleaning his pipes.” Michael noodles to remember his two bass notes. Scott states that in the last rehearsal they “confirmed it’s in the key of E.” Cody adds, “And we got the bass part. We just need to get the guitar part and the ‘Rikki don’t lose that numba’ (he sings it).”

Jake has apparently listened to several versions of the song at home prior to this session. After deliberating whether to listen to the live or studio version, he finally finds the studio version and they listen to a few seconds of it through his cell phone speakers. He stops the recording and leaves to get a cymbal to add to his snare drum. Others noodle, playing scales and parts of the song, and Scott tries the chorus melody on trombone, playing the correct rhythm but mostly incorrect pitches. David and Cody try to help Scott figure out all of the notes in that phrase. Scott plays it again, more correctly than before but not completely correct. David says, “He’s got it!”

They have yet to listen to the entire song so Scott starts looking for the studio version on his phone. After he finds it, they listen to it on his phone’s internal speakers. Jake is in and out with percussion instruments. As they listen, Cody comments on the parts he thinks he wants to play and what he expects he will need help with. David reminds them that “it’s fine to write stuff down.” Jake, Cody, and David leave to get

paper and pencils. While they are gone, Scott continues to search on his phone. Michael noodles on his instrument.

When everyone returns, David asks what tempo it is. Cody says, “I think it’s ‘adiago.’ [sic] It’s not too slow. It’s medium tempo. Or maybe andante?” They listen a few more times then each group member practices on his own. As they listen to the beginning only, they focus on specific notes and number of times to play certain sections. David writes something down, thinks for a second and asks Michael to play the bass part. Then Scott plays the repeating opening motive and it sounds to me like it is starting to come together. David says, “Yeah, it’s good!” Cody adds his part in but it does not fit with what they are playing. Lauren, the student teacher, has been listening and suggests, “Maybe you could all try playing it together to see if you’re playing it the same way.” Scott says, “Yeah, it’s just, like, frustrating cuz we don’t have the recorded version so we’re going off a live version.” After a moment of silence, Scott tries to help Cody figure out his trumpet notes by saying the pitch names. When that does not work due to transposition issues, Scott holds out notes on trombone while Cody, Michael, and David all match them. They determine, however, that Scott is flat and needs to push in his tuning slide. When he tries, the tuning slide will not move so Scott leaves to go get slide grease and works on repairing it.

While David helps Scott with his trombone, Cody, Jake, and Michael noodle independently on their parts. Jake works on the bass line rhythm, using the high and low bongo drums. He is not playing the percussion rhythm from the song, but rather the upper and lower notes of the bass rhythm. Cody eventually stops playing and suggests to Jake and Michael, “You guys play it. I’ll count you off.” He does so, and Michael plays the

bass line but Jake enters at a different tempo. They go back to their own practicing. Scott and David, finished fixing Scott's instrument, join Medhi to focus once again on solidifying the starting pitch for the introductory repeating "Rikki" motive. As they practice, Scott asks, "Does that sound right? It sounds nice to me but . . ." Michael asks, "Are all the notes in the key of E?" and Scott says "yeah." Michael confirms, "Ok, then it should be right."

Jake, who is filling out his reflection form as the others play and talk, asks, "What's the name of our group?" They start to discuss it then discuss unrelated things and noodle around. After a few minutes, Scott continues to help Cody solidify a few more trumpet pitches by telling him, "It's E-natural." Cody plays his E-natural (which sounds a major second lower from Scott's trombone pitch). He noddles around but still does not lock in on the right pitch. The group again breaks out into noodling individually and discussing whether Michael will start the song with his bass line or Jake on the marimba solo. They agree that Michael will begin. As they attempt to play the beginning, piecing together the parts they have figured out, David leads a discussion to determine who will enter at what point. Attempts to practice it together ensue, until Jake reminds the group, "We still haven't figured out a name." They discuss their name and fill out reflection forms for the last ten minutes of class.

Session 3

This session begins with each group member attempting to tune to a tuner. They run this session similarly to the previous one, with Jake being in charge of the recording, Scott attempting to help Cody learn the notes of the melody, David helping where he can, and Michael noodling on his own and playing when Scott asks him to play something.

Scott, Cody, and David begin working on getting pitches for the chorus melody. They alternate between listening, playing along with the recording, noodling by themselves without the recording, helping each other match pitches, and sometimes writing things down. David encourages Cody to write down notes as he figures them out, which Cody begins doing during this session.

During this session, they have a conversation about a saxophone solo in the middle of the song – a section they have not discussed up to this point. Michael starts learning it, then they have more conversation about rehearsing outside of class and various other topics. Cody finally turns the conversation back around, saying, “Ok, let’s get back to work, cuz we gotta get something down.” They work on the chorus melody again but do not revisit the saxophone solo. Scott and David discuss the third scale degree in the E concert scale. Scott plays the last three notes of the chorus motive on his trombone using G and then he plays the E scale using G-sharp then G-natural and concludes, “It’s the minor third.” David plays the phrase a couple of times but is confused and still does not know which is correct.

They do a lot of individual and small sub-group practicing and less as a group. The melody continues to be the least prominent and the bass line the most prominent. Toward the end, Scott revisits the saxophone solo idea, suggesting that Michael “bone up on [his] jazz” because he thinks he and Michael should play improvisation solos in a section of the song.

Session 4

Scott and David are absent today. Cody does not have the paper he wrote everything down on so he starts copying what Michael has written. Jake is in and out

setting up percussion equipment for his makeshift drum set. (I call it “makeshift” because he does not have enough drums to create a standard drum set. He and other percussionists have to find and share available drums among groups in order to create the type of drum set they need. If they had had access to other equipment, I wonder if they would have created different type of drum sets.) Michael and Jake independently play their parts but it turns into them jamming together. Jake is still playing the bass line rhythm, not the actual percussion part from the song, though it is unclear if this is what he means to do. They do this for about ten seconds then look at each other, smile, and Michael says, “That was pretty cool!” Then they do it again without counting off. Cody, who was writing during the jam session, begins practicing the repeating intro motive that he and Scott had worked on, then summarizes,

Scott's got the melody down pretty good so I just have to learn like the high part of the melody, like (sings in a falsetto-like voice:) Rikki don't lose that number, it's the only one we see. If you got to play the number then play for me.

They all laugh. Jake jokingly suggests, “We need to look up the lyrics!”

Again, in this session Jake plays the recording from his phone several times, and he and Michael noodle around on their parts individually and together. Cody works a great deal on learning the piano motive, and because Scott and David are not there to help, he asks Michael to help him. Both of them isolate pitches, attempting to play them. Jake, bored, eventually asks, “Can we just try and play it from the beginning?” Cody says, “Sure,” then he snaps the tempo and counts them off. As they rehearse together, Cody takes charge assessing and strategizing after they play. He directs them by saying things like, “After the three times (sings it), you guys stop and then Scott takes the

melody.” This launches a discussion on the overall form, when each person should enter and how to fit their parts together, but they fail to conclude anything.

Cody, working on his piano motive, alternately listens to the recording, talks about it to Michael and Jake, sings it, and plays it. He works solidly for about 13 minutes on it, and finally settles on a set of notes that Michael has helped him work out. Though he plays the rhythm from the recording, he has adapted the pitches for the trumpet (the piano riff spans over two octaves). Michael’s tone of voice indicates that he is not confident that these are really the correct pitches.

Once Cody seems content with his part, Michael asks Jake, “Do you remember the thing that we used for repeat? I wanna repeat [the bass motive] six times.” Jake helps him draw a repeating measure sign then asks, “Can we start from the beginning?” For the first time ever, they try a run through without the recording; they stop after the repeating intro motive. Cody says, “If only we had Scott! Aaaagh!” then he focuses on learning the repeating intro motive.

Next, all three group members strategize about how to put parts together and figure out entrances. They figure out Jake’s cymbal part then Cody goes back to practicing, while Michael continues to hold out pitches for Cody to match. As Cody gets more and more notes, he says to himself, “Ah. Yes!” (Not all of the notes he is playing sound correct to me.)

Mr. James has been in the room for a few minutes and leaves before they play the run-through. After he leaves, Cody expresses, “Gosh, why is it that every time I see him I start panicking?!” Abandoning the run through, they play to the recording and comment, sing, or play along with individual parts. The last 10 minutes of class are spent filling out

reflection forms, joking around, trying to figure out when they can meet outside of class, and listening distractedly to the recording.

Session 5

Scott and David are both present today but Michael is absent. They are listening to the music on Jake's cell phone speakers again. David starts in: "There's a problem. We need to know where we're gonna stop." Scott says sarcastically, "Dude, I got it. Let's stop at the end of the song!" This begins a discussion on not only the ending, but also the overall structure, including whether they would improvise. They do not solidify anything.

Scott leaves to get the paper that David had been writing on in previous sessions. Jake noodles on the drum set. David and Cody warm up independently by playing scales and song motives. Scott finally comes back with the paper. Then this pattern settles in: Scott and David work together, Cody works on his own, and Jake is mostly silent. There are quite a few lulls, conversation about unrelated topics, playing of the recording, and noodling around during this session – it seems less focused than the previous rehearsal when Scott and David were absent.

At one point, they attempt a run through without the recording. After a short lull, and some talking and noodling, Scott instructs Jake, "When you play that, remember to like, fill some stuff for phrasing. The most important part though is that you have something going on 2 and 4." Jake plays on 1 and 3. Scott claps on 2 and 4 then says, "I'm sorry, it's beat 3 actually, that's the backbeat. Play what you were doing."

They attempt run thoughts four times but stop short because of tempo and entrance issues. After each attempt, they discuss the reasons why they stopped and try to strategize

a solution. However, when the strategy does not work, they end up in a lull until someone starts playing individually and they move on to another issue.

Scott eventually says, “Alright, let's just like spend the next ten minutes figuring out the chorus.” He attempts to play the chorus melody, which Cody learned and wrote out last week, but for some reason, he is not sharing this with Scott. Scott and David work by playing and discussing their part together. Cody works by singing then playing on his trumpet and writing things down. He seems to have an “aha” moment, saying, “Oh, oh! I get it!” Then he says to himself, “Ok, what’s this, ok, B-flat, G, A. . .”

Jake, who has not played for a while, starts filling out the reflection form, and asks Scott, “What does the first question mean?” Scott reads it: “‘What is the form of the song?’ You know . . . the way it’s structured, like the verse, then the chorus, then the verse.” This conversation apparently reminds David to give Scott his paper: “You take that paper, Scott, cuz it would kind of blow if I moved and then I kept the paper with me.” David starts playing his trombone and the others follow suit (cacophony of sound) although clearly Scott is playing the least.

Without solidifying his own part and even though there are almost ten minutes left in class to practice, Scott puts his horn down and says, “It’s reflection time, I guess.” Jake suggests that they get together before next week. Cody asks what the form of the song is. Scott says, “Ok let's just write down intro, verse, chorus, solo, chorus, end. That will be good.” Scott and Cody talk a bit more about the division of parts because Cody does not seem clear on when or what he is exactly supposed to play. They discuss things unrelated to the project after this and do not run through their song at all during this session.

11-23 Practice Performance

Like all groups, No Country for Old Men had about ten minutes to practice before the practice performance. However, I was unable to record that session.

David has moved away and today is the first day he is not in the group. From stage left they sit in order: Scott, Cody, and Michael. Jake sets up his makeshift drum set behind them. Today it includes a music stand that he plays on, which I have not seen before. Before the group plays for their peers, they spend quite a long time setting up. Cody tries to clarify the form to Scott. Michael sits and waits. Eventually each person introduces himself and they continue to stall by chatting with the audience about the song. Finally, Jake begins playing the specified rhythm on drums, then Michael enters on his baritone sax with the bass line. Jake and Michael play the same groove pattern over and over while Cody plays the intro motive on trumpet as planned, Scott joins with trombone on the chorus along with him (Cody seems more confident than Scott), Scott plays an improvised solo (I have never heard this before), then Scott and Cody play the chorus together again. Eventually Scott points to Michael who plays a solo (it sounds much more planned than Scott's) with percussion accompaniment. Cody reenters on the chorus melody (Scott follows him) and Michael comes back in on the bass line, all fitting in with the drums. Scott and Cody never quite solidify the melody after Michael's solo. Jake fizzles out and the performance ends clearly unplanned. The group members look at each other awkwardly, mumble something, the audience claps: Scott concludes, "That was awkward."

In the post-practice performance, they have about ten minutes to work. Cody, frustrated with their performance, starts the conversation saying, "So we really need to

figure out what the hell's going on after the first part of the song.” Scott, apparently okay with the performance, does not mention their inability to transition from verse to chorus or when to end, and focuses on the positive: “Jake, what you did today, keep doing it. That was good,” then asks, “Did it feel short to you guys?” Cody replies quickly with, “No, it felt really long.” Cody takes out his paper that he has been writing on. Michael looks at it and tells him, “You need to rewrite this.” Cody attempts to explain that he only made notes for himself.

They discuss the form for the rest of the session. Based on what Scott has said in the past, Cody tells Scott what he thinks the form is:

Like you were doing this part, you and I do our duet and then (he sings something) and then (points to Michael) and then we do the part that's split (sings his high part). We do that twice and then we do that (points to his paper) and then Jake goes to play on the stand. Then that's where Michael does his improv part, then that's where he plays bass line again. (He is looking at his sheet the whole time, which apparently has the road map on it.)

Immediately after Cody’s run-down of his understanding of the form, Scott says:

I wanna try something new like, we play the chorus once and then like I take eight measures of solo and then you (Cody) play the chorus and then you two (Michael and Jake) play eight measures.

Michael suggests, “What if we switch up parts? Like, you guys (Scott and Cody) are the bass line and I'll do the melody.” Cody panics and says, “I can’t play the bass line. My bass line sucks.” Scott agrees, adding, “We tried playing the bass line and it sounded weird,” and leaves to get a drink of water.

When Scott returns, he says, “Alright, so let's just restart. At this point, let's just scrap this and, um, focus on communication.” They discuss how to begin the song. Cody says, “They (peers from other groups) really think we communicated well, remember, that’s what they wrote on the forms.” Scott adds, “We communicate on a higher level

than other groups because like at this point, we're pretty much a jazz combo.” Michael laughs. Scott then lays out the new form for them:

Yeah, so let's take it from the top and communicate. So it'll be Jake, you (Michael) enter, we (Scott and Cody) play the chorus once, and I'll play a solo for eight bars. You (Cody) help me count and then after those eight bars, then you (Cody) play the chorus again and then it will be Michael.

The bell catches them off guard. No one writes down this new form, and they rush to pack up their instruments.

Session 6

At the beginning of class all of the group members warm up individually. Jake is setting up a drum set. After a couple of minutes, Scott says to Cody, “Let's see your book so I can write down the road map.” Cody tries to explain what he has written, then wishes aloud that they had done a different song.

Scott takes them through the “road map” again, though it differs from the one he ended with last week. Michael suggests, “I think it'd be easier . . . when you do your solo, have the person that's gonna come in play on your eighth measure.” Scott responds, “We'll be counting in our heads too. In fact if Cody's gonna be stWhitneyng between us, he can just be like (sings) ‘1,2,3,4 Rikki don't lose that number.’” Michael does not reply, and then that ever-familiar cacophony of sound erupts, the sound of trombone heard least.

During this conversation, Jake is practicing a marimba part that I have not heard him play before. He tells the group that Scott helped him learn this new part this weekend. Cody suggests to Jake, “When you do the (sings the marimba part), try to stretch it, (sings it again with a ritard at the end).” Jake tries his suggestion, and Cody approves. Scott then suggests he “use like really soft mallets to give it a like more gentle sort of feel.” Jake leaves to go get softer mallets. Scott launches into a discussion of

wardrobe for the performance (I also hear a “that’s what she said” joke and some laughing). Jake returns and practices with softer mallets.

Abandoning the wardrobe conversation, Scott revisits the discussion about the “road map” and mentions adding an outro. Cody asks, “What's the outro?” to which Scott answers, “That's like the intro but out, so that's when we do (sings Rikki don't lose that, Rikki don't lose that, Rikki don't lose that numbaaaaa).” Michael and Cody noodle independently to figure it out. Scott does not play, but has more conversation with Jake about the marimba solo. They all decide that Jake should use the softer mallets and play it with a ritard, so Jake obliges.

Scott begins practicing the intro motive on his own. Cody asks, “After we play like the last few notes, do you wanna vibrato it?” then he plays to illustrate what he means. Scott practices doing it on trombone and concludes, “Of course!” They rehearse that last phrase together with vibrato, and Scott finalizes, “Yeah, vibrato and fade away to silence.”

I walk in the room and they are practicing individually and talking. Cody and Scott discuss entrances, Scott suggests they run it, but they discuss wardrobe then the improv sections, Michael and Cody asking Scott a lot of questions. When they try a run through, Scott misses his entrance and says, “Wait, do we know what the entire chorus is?” I ask Scott and Cody, “Can I hear the entire chorus?” This starts a conversation among the group members about who plays which parts. They are unable to solidify their parts division, so I again suggest, “Let me hear whatever y'all are doing with the chorus.” Scott counts them in. Cody only plays the chorus once but Scott goes on. They converse to figure out the discrepancy, Cody summarizing, “Let's put chorus, repeat, chorus and

then it repeats, and then it's Scott's spot, right?" Scott replies, "Right. Honestly, that works."

This question and answer conversation between group members continues without my input. After they finalize the outline of the form, I ask again, "Can I hear y'all do the whole thing all the way through without stopping, no matter what happens?" Jake begins to play and they are off. Scott audibly counts off for his and Cody's chorus entrance. Though not without errors, they play to the end. Immediately, Cody critiques Scott, reminding him that he is supposed to play "the part where we split off into the high part where we have (sings "Rikki don't lose that number, dah dah dah dah dah dah")." Scott says, "Yeah, I remember now. It's just weird . . . I'll remember to play with you this time, I just, um, forgot." Scott then critiques Jake, and Michael and Jake make a couple of suggestions for the good of the group.

Before they run it again, Michael interrupts, "Wait, can you guys play the last chord real quick?" Scott and Michael work out a unison note for the final pitch. Cody tries to match their pitch but ends up what sounds like a major second higher than what they are playing. Scott says it is "A nice sort of creepy ending." (It seems that they all know it is not the same note. I am not sure if this is what they are going for or if they just do not know how to solve the problem any better, but they decide to keep it that way.)

Scott suggests, "Alright, so let's just play the last chorus and then the outro." Cody, still unsure about what he should play, asks, "Ok, do you want me to do my high part or just do the chorus?" Scott continues to say things that do not answer Cody's question, so finally after three more times of asking, Scott says, "With the high part." They all play together again several times, each time discussing issues after they fall

apart. Cody and Scott contribute the most. Michael and Jake are mostly quiet. Finally, after a long conversation about entrances, Scott counts off and they play, all entering at the right time. Cody plays his solo, they all play the outro, then all end together except Jake, who ends after them with a cymbal roll. Scott exclaims, “That’s it! That’s how we should end it!” to which Cody excitedly agrees. Without further discussion, they run it again and end as practiced, with only minor bumps throughout.

They now seem less frustrated and continue to assess and strategize, but more laughing is involved. The group members then have a lengthy conversation about their performance logistics as prompted by the reflection form: who will introduce the group, how they will enter, how they will leave the stage, and what they will wear. They engage in some unrelated conversation as well. Michael suggests, “One more run through and then we’re done?” Cody agrees. Jake begins, but they stop when Scott misses his entrance. Cody exclaims, “That was yours!” They laugh and start again, Scott counting them off this time. Fumbling, they make it to the end. Cody says, “That’s close enough, you guys,” and they laugh. I listen as they squeeze in one more run through. Again Scott botches his entrance and Cody exclaims, “Scott, I even pointed!” Scott says, “Sorry.” Michael mentions, “We forgot to work on our exit.” The bell is about to ring, so they pack up and leave.

Final Performance

In the final performance, as three members set up, Scott introduces the group and explains that David “is in Washington.” As he sits down, he says, “Gentlemen: Hats.” All members put on a silly hat. The audience laughs. Michael, Cody then Scott are sitting and Jake stands behind them. Scott turns and looks at Jake who plays a beautiful marimba

solo with a ritard at the end. When he finishes, Michael immediately begins the bass line and Jake runs over to his drum set. Once in place, he plays the percussion part and grooves to Michael. Scott and Cody count measures and when it is time for them to enter, Scott quietly but audibly counts them in and they play the first phrase of the chorus melody together (Cody's first note is a minor second lower than Scott's but otherwise what they are playing sounds the same). Scott plays the second motive by himself. They do this twice then Scott plays an improvised solo, sounding more rehearsed this time. Cody and Scott reenter with the chorus. This time they only play it once, followed by Michael's improvised solo that he has clearly taken time to plan and practice. The other two enter with the chorus again. This time Cody plays the second phrase by himself as well as a few more solo bars. When he is done, Scott plays "Rikki don't lose that number," which Cody repeats, then Scott again. All winds hold out the final note together to end it. Jake seems to be watching them for the final note then plays a smooth cymbal roll. They all fade out together and the audience claps. In a planned display, all of the group members stand up and shake hands with each other before leaving the stage. I was quite impressed by this group's ability to pull this performance together, especially because the day before, Scott was still having trouble remembering his parts. The audience seemed to genuinely enjoy it as evidenced by their hearty applause, and the group seemed to be happy with their own performance.

MGMT's "Kids" (That One Group)

Getting to Know the Members of That One Group

Whitney. Whitney, a 14-year-old saxophone player, is one of four freshmen in the top band this year. She joined band because "it was required in fifth grade to join a

music group,” she “thought it’d be really cool to play an instrument.” She “liked it and just never quit.” When I asked her what she likes about band, she said “when you get a new piece of music and sometimes you don’t like it but sometimes you really do. [Sometimes the songs] stick in your head all day . . . it’s just fun to learn how to play [them].” Whitney does not like several aspects of band. One is “when you’re not getting a part and then your director gets mad at you (laughs).” Another is when her band responsibilities interfere with her other classes and she has to choose, though band sometimes wins out: “[One time] I had a playing test and a math test and I focused more on the playing test than the math test! (laughs)”

Justin. Justin, a senior percussionist, has been in band since fifth grade. He said, “I just got into band cuz I like drumming. I like all kinds of drumming.” He “started on snare drum, concert stuff. I only added other things when I got into high school.” He now plays “drum set and mallets” as well. Justin plays drum set in a rock-type band outside of school and adds that that is his favorite percussion instrument. The thing he likes best about school band is when “we’ve all spent so much time [learning] something and we can just groove and we’re having a lot of fun as a band. It’s not as much work and we’re just having fun.” Like Whitney, Justin noted that trying to do class work and honoring band commitments can be difficult at times: “You try to space out your time between like [both things] and you end up failing both things! There’s just no win.”

Tim. Tim joined band as a freshman because “a friend brought [him] to a percussion clinic.” Though that friend “ended up not doing marching band, [Tim] still kept doing it.” Though he “did not realize how much work was involved,” Tim has stayed in marching and concert bands and he is now a senior percussionist and one of

three African American students in the band. Tim “first started [his] freshman year on drum set,” as he already played drum set outside of school, but he was not able to read music. Since joining band, however, he has gotten “better at reading music and better at drum set . . . other things that involve music seem much easier.” Because of his increased ability to do musical things outside of school, Tim thinks “the best thing about [band] is what you get out of it, like musical understandings and theory.” Like Justin, Tim plays drums in a rock-type band outside of school. Though they are in separate bands, they both said that the people in their bands “all know music so it's easy” to work and play with them—they know how to read and write using traditional musical notation. Though he realizes that time is part of the commitment, he describes what he likes least about band:

I think the responsibility just besides whatever the average teenager already has, so the copious amounts of homework and all the stuff you have to do on the side. It all just makes everything much harder and if you wanna hang out or do something after school, that doesn't happen and you don't have a Saturday cuz you have [marching band] invitationals.

Alexis. Alexis’s “parents were band people” so she decided to sign up in fourth grade and “ended up liking it.” Now a junior clarinet player, the thing Alexis likes most about band is “the challenging part of it where you [read] sheet music and sometimes it’s hard and you have to take time out of your own day to learn it.” The thing she likes least about band is that “it takes a lot of time out of your hands and it's harder to do things related to school cuz you're so worried about, ‘Oh, I've gotta learn my part, Oh I've gotta learn this.’”

Tyler. Tyler is a junior clarinetist. In fourth grade, he “wanted to sign up for orchestra but I never took the sheet home and then [the next year] I signed up for band

because my mom wanted me to. So, if things were different I might not be here.” When I asked him what he likes most about band, he said tentatively, “I think it's the music. I like all the types of music mostly.” The thing he likes least is the time demands and high stakes: “I think for me, sometimes it just gets too demWhitneyng to the point that it's not fun anymore,” to which the others in the group nodded their heads in agreement.

Choosing a Group

The membership of That One Group “kind of just happened.” Initially, Alexis told Whitney that she was “not in a group with anyone” so they signed up on the sheet together. Justin added, “Well, I went to write down me and Tim in a group and someone came up to me and told me I couldn't be in that group.” Then he wrote their names beside Whitney and Alexis “and that's how this happened.” Tyler did not give a specific reason why he chose to sign the sheet with these four, though there were spots left in other groups. Whitney finalized, “So it just kind of came together and just worked out!”

Session 1

That One Group spends the entire first session choosing a song. Alexis suggests “Perfect Quartet” (I was not completely able to decipher the name) which has a “phat saxophone solo,” as Justin points out, would be “really cool!” But Whitney is worried that it will be too difficult. Though everyone likes it, they can tell that Whitney is not comfortable, so they move on. Tim says the Kids song would be “the easiest one, cuz [he] learned it by ear this summer already.” When Justin suggests a song by Lonely Island, Tim says, “Um, that's really vulgar . . . Is there a clean version?” Justin replies, “Dude, if it had a clean version, it would sound like . . .” and Tim finishes his sentence: “it would sound kind of stupid.” Whitney suggests “Party Rock,” but Tyler is concerned

that “everyone’s gonna pick [it].” Justin colorfully notes, “I already know that that Mick Jagger song is gonna piss me the fuck off cuz everyone's doing it.”

Alexis eventually says, “We gotta figure something out so that we can actually learn our parts today.” Because it is getting close to the end of class, Tim asks, “Why don't we just do an MGMT song? You guys wanna do ‘Kids’ or ‘Electric Feel’?” There is no response, so he asks, “Have you guys heard of MGMT?” Alexis shakes her head no, and Justin assures her, “Dude, you know the song. You're just not aware.” Tim suggests that they do “Electric Feel.” Once they start listening to it, Justin and Tim begin planning how they might split up the drum parts, and Justin exclaims, “That’ll be fun.” Next, they listen to “Kids,” and Whitney advocates, “I like this song. This would be easy.” Alexis agrees, making a plug that “we could just do the melody part.” Then Whitney and Alexis leave to get approval from Mr. James for “this or ‘Electric Feel’ or ‘Party Rock’.” They come back and tell the group he has approved them. The group has more discussion and finally settles on “Kids.” With just enough time left, they fill out their reflection forms and the bell rings.

Session 2

The group begins this session by listening to a recording of “Kids” on Tim’s cell phone speakers. Tyler is absent, so today it is Tim and Justin both on vibraphone, Whitney on alto sax, and Alexis on clarinet. Tim is playing the instrumental opening motive along with the recording on the vibes. He is able to match several of the pitches on initial trial, supporting his claim that he has learned this song before. Alexis attempts some notes of the opening motive on clarinet as well. Alexis and Whitney are not sure they can play the beginning, Alexis half joking, says, “Maybe [Tim and Justin] should

play the beginning (laughs), then they can play percussion for the rest of the song, but that means one of us has to figure out how to play [the opening motive].”

There is a lot of individual practice, everyone attempting to learn the opening motive for most of this session. Justin calls pitch names to Tim as they work on vibes. Alexis gets the first five notes of the motive correctly, exclaiming, “I got it!” Then they listen to the song again; Alexis plays along. Whitney and Tim attempt to join but are still missing a few notes. They discuss the highness and lowness of the notes. When the motive changes notes, Alexis exclaims, “Whoa, we gotta learn that part!” The recording stops.

Justin questions Alexis as he continues to try to get the first notes to the opening motive. Whitney, who has figured it out and is now playing it with Alexis, suggests they write the notes down, but no one does so. Whitney then suggests, “We need to figure out the key this is in. Is it in B-flat?” Alexis says, “Yeah,” playing it to check the key. Justin, a little annoyed because Alexis is not answering his question, says, “That’s fine, but tell me your sequence of notes! We’ll figure that out in a second.” Tim says, “I can play what’s in the background and yeah, you have to play the change.” They listen to where it changes notes. Alexis agrees, saying, “Yeah, we have to learn the key change.” Tim says, “Well, it’s not a key change, just a few different notes.” (The shape of the motive changes.)

Justin still does not have the middle notes of the motive, but declares, “Here’s the last two.” The recording plays on and Alexis, Whitney, and Justin practice the motive, independent of the recording and each other. Whitney notes, “It slows down too.” (The tempo does not actually slow, but the note durations get longer.) Justin finally figures out

the entire opening motive and Tim, who has been listening but not helping, says, “There ya go!” Justin says, “Yay!” then plays it several times.

All four of them then converse about who will be playing which percussion instruments, Justin declaring that he will play the drum set; he is just playing vibes “for fun right now. I don’t feel like bringing the drums in here [today].” Tim will play vibes. Justin points out, “There’s something in the background going on. It’s off beats.” They listen to the song again, Alexis (clarinet) and Whitney (saxophone) listening intensely to see if they can hear what he is talking about. Whitney says, “I probably hear it, I just don’t realize I’m hearing it (laughs).”

Justin changes direction: “Ok, I want to figure out the ending” (referring to the second half of the opening motive). Alexis and Whitney get their reflection forms and begin discussing their pseudonyms. Justin noodles on vibraphone, finally playing the second half of the opening motive. He exclaims, “There we go!” Whitney (alto sax) says, “Wow, that was good!” Alexis wants to learn it so Justin gives them mostly correct note names. (Transposition is an issue but they are not able to articulate the problem.) Justin pounds the notes on vibes, saying the note names louder, and Alexis says, “That doesn’t even make sense!” Justin pounds some more, asking sarcastically, “Are you playing notes in the band? Like remember, like we sight read? Like when you have to play major scales? B-flat.” Whitney and Alexis laugh. Tim plays the recording again from that section and they all try to play along again, not quite getting the second half of the opening motive. They split off to practice for a bit: Whitney and Alexis work mostly together. Tim and Justin talk and play together as well. The recording is playing in the

background but they do not seem to be paying much attention. This type of practicing occurs a great deal throughout their sessions.

They come back together and discuss “the last three notes [which] are B-flat, G, B-flat,” Justin says. Alexis sings the motive. Alexis and Justin still do not understand how to transpose his vibraphone notes for clarinet. Alexis finally plays a note and says, “I got the last note. It’s a C.” Whitney tries and matches Alexis’s pitch. Alexis sings the last few notes. Alexis and Whitney both arrive at it at the same time, look at each other and exclaim, “Yeah!” Alexis says, “We got it!” The boys say nothing. Alexis says, “I’m so afraid I’m going to forget all this stuff! We need to write it down,” but she does not. Whitney and Alexis continue listening to the recording and counting the phrases of the opening motive until they figure out that it repeats three times and changes on the fourth. Justin, listening to what the girls are doing, plays it on vibes, showing them how easy it is, still either not understanding or remembering the issue of transposition. They all discuss whether the winds’ notes are correct—Alexis says, “We’re gonna say it’s right! (laughs).”

Whitney then suggests, “We should figure out the lyrics part cuz I don’t get that. Is that even a . . . is that a higher or lower octave? Is it the same key?” Justin exclaims, “Oh. God! We haven’t even thought about it!” Whitney assesses, “But we have the whole, like, first minute figured out, so that’s good.” Justin submits, “Yeah, I forgot the little bass part” and begins plunking out a bass line on the vibes. Tim plays the recording again starting at the lyrics section, and Whitney, singing along for a couple of notes, affirms, “It’s really high.” Then she plays some notes in the high saxophone register and tells the guys, “You guys should figure out what that note is,” then she turns to Alexis,

“Cuz I think they’re more likely to figure it out than we are (laughs).” The recording is playing and Justin is noodling around on vibes trying to play the bass part. Whitney, starting to think about the lyrics, suggests, “We need to figure out what that comes in on. I’m supposed to play that part but I don’t know. Maybe we’ll just have Tyler play all the lyrics and Alexis and I can do [the opening motive]!” All four talk about who is going to do the lyrics, the opening motive, and the bass part. The girls laugh a lot, then there is a lull in conversation.

Eventually, Whitney reminds them that they need to figure out the lyrics. Tim plays the recording again, and the girls attempt to play along to the verse with little success. Whitney thinks out loud, “‘If you were a child.’ What *is* that!?” No response. The girls continue working together, and Tim plays the recording and chats with Justin, who works on the bass line. Then Whitney says, “They said that if we get so frustrated that we can’t figure out something that we can ask for help.” The song stops. Whitney and Alexis leave. Tim chats as Justin continues to figure out the bass line.

Alexis and Whitney return with Mr. James. Alexis asks, “Hey, can we go back to the beginning where the lyrics are?” Tim starts the recording, and the girls sing the part they know.

Whitney: “If you were a child” (says the lyrics)

Alexis: Well, what are the . . .

Whitney: Is it lower than . . . I thought . . .

Alexis: I think it’s the . . . ough

(On second verse, Alexis plays the first note as the singer sings it and it’s correct.)

Alexis: Ok, that’s the first note, there!

Whitney: Wait, wait, what?

Alexis: it's an E!

Whitney: What's that note for me?

Tim starts the recording again. Alexis plays the first note of the first verse of the lyrics and says, "Ok, so that's definitely an E. 'If *you* were a child.' Uh, I can't get it." She is now trying to figure out the second note, and finally says, "Maybe Tyler will come back and he'll just like, be super awesome the whole time!" Whitney asks her, "Are you playing it up high or . . .?" Alexis says, "No, it's the same. It's not higher or lower. Same octave. You know how we go (plays the first three notes of the opening motive)? It's the third note." She means that the third note of that motive is the same as the second note of the lyrics. Whitney plays up the scale on her sax and lands on that third note. Alexis says, "That's what it starts on." They struggle some more with the first notes of verse one, while Justin practices on his own. They decide to give all the lyrics to Tyler then feel instantly guilty about it. They continue working, though it is very slow going. There is a lull for a few seconds. Whitney finally assesses, "Well, at least we figured out the first note." Justin and Tim are trying to learn a different repeating octave motive.

Mr. James, still in the room, leaves quietly. Alexis says, "Well, maybe his presence helped!" Whitney laughs. Justin shows a different rhythm to Tim: "So, (plays and counts:) & & & &." Whitney asks, "What's our tempo?" Justin snaps his fingers and says, "It's about 100." Then Tim plays the vibes loudly with full ring, practicing this part for several minutes.

Whitney then exclaims, "I wanna play this, cuz it's such a cool song!" Alexis agrees. They discuss their frustration with learning the notes then go back to singing and

playing with the recording. With eight minutes of class left, they decide to fill out reflection forms. Tim continues to play the new octave motive he is learning. Justin is impressed: “Wow! That’s cool.” Tim assesses, “I thought it was two different notes, but I’m pretty sure it’s just octaves.” Whitney answers the question on the form, “We accomplished something today! Learned the first minute of the song.” Justin plays the octave notes with full ring and Tim says, “It actually sounds alright!” Justin replies, “Amazing.” They pack up, leave the room, and the bell rings.

Session 3

As they begin, Alexis and Tim are playing the opening motive. Whitney says, “Maybe we should go get something to write on. I feel like we should write it all out.” Whitney and Tyler leave to get paper and pencils. When they return, the fire alarm goes off and everyone leaves.

After fifteen minutes, they return from the fire drill and Whitney strategizes:

Ok, we need to listen to the song and figure out where's a good stopping place and like what's like playable for us cuz we're not playing the whole thing . . . and then we're gonna have to find out every part that's gonna [be played] . . . we're gonna actually have homework this time.

Justin leaves and shortly returns with a drum for his makeshift drum set. Tim practices the octaves part he started learning from the previous session. Tyler and Alexis discuss the lyrics part. Whitney reads the reflection form: “Overall where is your group at this time?” responding with, “Not where we should be!” She finalizes, “So we’re learning the first two minutes and forty-two seconds, which is more than half the song.”

Tim starts the recording and everyone plays along. Whitney is writing as she plays, while listening to Tyler playing the lyrics part. She comments to Alexis, “He’s better than we are. We’re all like, ‘I can’t figure this out.’” After the recording ends,

individuals practice for a few seconds, then a lull. Tim starts the recording again, and some group members play along, as they do several times during this session. Tyler listens, plays very quietly along, then writes. Tim, as he often does, asks, “Can we go back to the beginning?” so they do. Everyone plays along except Tim who begins to learn a new part. Justin leaves and returns. Tyler and Alexis sit idly as Whitney writes something down.

I walk in. Tyler is playing the lyrics melody softly along with the recording (getting it right almost all the way through). Alexis and Whitney are counting measures until they join again with their motive. Whitney yells, “Seventeen!,” writes it down, saying, “I’m gonna make this part A and this is gonna be B.” She writes as she assesses, “This song is very repeated.” Then they all work independently on different things. Whitney practices the opening motive, Alexis looks at what Whitney has written and practices it, Tyler writes, and Justin listens as Tyler and Tim play a section together. The recording plays in the background, and they all join intermittently. I ask, “Is Tyler just playing it quietly because he’s still trying to learn it?” Alexis says, “I’m probably gonna end up helping him with that part.” They stop the recording, quickly fill out their reflection forms, and the bell rings.

Session 4

Tim starts rehearsal by playing the opening motive on vibes. There are the typical two conversations going on—one between Tim and Justin and another between the other three—along with a lot of individual noodling on their parts. Whitney soon asks, “Who’s gonna bring us in?” Tim suggests, “Well, we have a drum set.” Prompted by the reflection form, they briefly discuss their pseudonyms for the project, then they go back

to practicing individually. The random playing of the opening motive morphs into an impromptu group jam session. They stop and begin assessing and strategizing what to work on next. Tim starts the recording from beginning and they all play along with it for a bit.

Whitney strategizes, “We need to write it down.” Tyler asks, “Wait, do you have the transposition chart?” No one answers. The recording begins again from the beginning, Justin counting phrases to see when he should enter, and everyone else playing along. Whitney assesses, “We need to transpose that.” Alexis agrees. There is some random noodling and talking as the recording plays. Tyler focuses on learning the melody for the lyrics.

They finally attempt their first run through without the recording. Tim tells Justin to “count us in.” Justin plays a boom-chick beat a few times then changes it up as a cue for Tim to come in. Toward the end of their arrangement, Whitney says, “And as soon as this section is over . . . we end the song and we're done.” Tim begins strategizing, “Let’s figure out [how to enter after the drop out section].” As then they listen to the recording from the beginning, Kyioshi is listening to “how many syllables” the singer sings certain notes on, attempting to ascertain the rhythmic accuracy of the lyrics in the first verse. They repeat this process of talking, playing, and listening intermittently, focusing on their individual parts, three more times.

I walk in at this point and ask, “How do y’all feel about performing next week?” Alexis says, “We feel more comfortable but not exactly 100% ready.” Then I ask to hear what they have so far, so they clarify entrances and parts and begin playing. Toward the end, they fall apart and begin discussing the problems. Alexis adds that she is going to

play the lyrics part with Tyler “cuz I think we need more volume with that.” Then she says to the group, “Let’s just start from the beginning again.” Whitney and Alexis exclaim that the run through was fun “cuz I was like excited to play the part!” They continue to assess what needs fixing and strategize how to fix it. After another attempt at a run through followed by assessing and strategizing, they realize they are out of time and have to “fill out these stupid reflection forms.” The bell rings as they are finishing up.

Session 5

Today, Whitney and Alexis are absent due to a field trip, so it’s just the guys. Before class starts, I ask Tyler, “How’s the lyric part coming?” He replies, “I cannot find where [the notes change], so I might go back and listen to it.” Meanwhile, Justin is working on setting up his makeshift drum set. (Like Jake in No Country for Old Men, he has to use drums that are available, not necessarily the drums that make up a standard drum set.) Tim noodles on the vibes. After three minutes of individual noodling around and not really talking, Tyler asks, “They’re really not here?” and Tim responds, “No . . . We need to learn that one part.” No one responds and Justin drums some more.

Finally, the recording of “Kids” comes on. Justin says, “Dude, I love this song called ‘Brace your Fear(?)’ It’s so cool.” He and Tim continue to talk while Tyler works by himself to learn the melody of the verses, intermittently playing along with the recording. Tim plays intermittently to the recording and cheers on Tyler after he plays the lyrics. As usual, they stop the recording at the sixteenth note section, and the two percussionists go back to practicing independently.

In the middle of the session, Lauren walks in and asks, “How’s it going?” Tim informs her, “We already have our part figured out so it’s good.” The music is still playing in the background and the same type of activity ensues after she leaves.

Eventually they begin the recording from the beginning and all three play along intermittently and seemingly independent of each other without discussion. Then Tim begins filling out the reflection form and asks Justin, “What’s number five on the sheet?” In response to question five, the two percussionists launch into a long conversation about the music they listen to outside of school. Tim talks about a band that his friend is in, “They’re so bad. When they play live, it’s ok.” Justin suggests that that particular band needs to “add some clean vocals” which “would make it a little bit better . . . cuz they have the low vocals, then they have the really high raspy thing.” Justin opines that he “hates all the double sub-genres,” then drums on the carpet. They discuss more local bands and drumming for over ten minutes while Tyler continues to practice his part and write. After that, someone starts the recording and there is more intermittent playing along with it. The percussionists play different things each time they play along, as if they are not really practicing but choosing different rhythms to play, perhaps because they are experimenting with different rhythms or maybe because they are bored.

There is a lull for about four minutes and the next thing I hear is Tim playing the opening motive on chimes. Justin says, “There’s not enough notes [on the chimes for them to play the opening motive on it].” After some discussion, Tim plays long tones on the vibes. They are trying to simplify the long tone part, playing only notes available on the vibes. Ultimately, after a few minutes of experimenting with those motives on the chimes, they decide not to use chimes and keep all parts on the vibes. Tyler plays his part

quietly along with the recording. The bell catches them by surprise. (This is a bit of a pattern with this group. They seem to get so absorbed in what they are doing that they do not keep track of the time.)

11-23 Practice Performance

The group begins their ten-minute pre-performance practice session by discussing how they will sit. Alexis and Whitney are back and Alexis asks, “Are we gonna sit in a circle? Like a little jam group?” then she laughs and leaves to go get something. As they are still setting up, Tim plays a few notes on vibes and Whitney and Tyler tune to a tuner. Tyler declares, “Today’s a good day,” and laughs, as if he is trying to make himself believe it. Tyler asks Whitney, “So are you ready for this?” Whitney exclaims, “Maybe!” Tyler tells her, “I’m kind of excited and nervous at the same time.” Whitney edits the paper she has written on: “I need to change that. Do you have a pencil?” Tyler hands her one. Justin has been in and out piecing together his drum set and complaining about having to move things from practice to the performance site in a few minutes. Whitney works on the opening motive again, writing on the paper. Alexis returns. There is individual tuning, playing, and talking for several minutes as they get set up. Whitney talks over Justin’s drumming, reminding everyone about when and what they should play and reviewing the overall form. Tim says, “Alright, let’s go. Let’s try it.” Justin is still setting up the drum set. Tim plays the opening motive on vibes.

Finally, Justin starts playing to bring them in and Tim enters on cue playing the opening motive. They stop when Alexis exclaims, “We missed it!” and laughs. Justin starts again. Tim comes in and Whitney and Alexis come in at the right time. Then Tyler enters on the melody, accompanied by Alexis, who plays intermittently. They are gelling

as a group pretty nicely, though the melody is still quiet compared to the drums and the opening motive. Before they reach the end, another group comes to get them for the practice performances. Whitney exclaims, “We’re screwed!” and they head to the band room for performance.

When they are set up on the “stage,” Tim walks over to the winds and talks to them before they perform. They are the most spread out of any of the groups: Justin is to the far stage right, then Tim, about five feet from him, and then the three woodwinds about five feet to the left of Tim. Justin introduces the group then looks at them and begins his drum beat to bring them in. They all enter on time. Alexis and Tyler both play the melody. They stay together throughout. At the drop out section, Tyler plays a solo by himself, softly but spot on. They end together, Justin the final one to play. Like the other groups, they had a few minutes at the end of class to discuss the written feedback they received.

Session 6

The three woodwinds set up two music stands so they can read the notes they have written for themselves. Justin and Tim have none because they have not written anything down. They begin the session with a lengthy discussion about how to sit and finally reach a decision. Eventually Tim moves, “So do you wanna go over the solos that you have? I know those are the parts we need to do.” Whitney counters, “I think we should run the whole thing first and then, yeah, maybe.” Justin leaves. I ask about their peers’ comment sheets. They are in Alexis’s locker. Instead of getting them, Whitney summarizes, “I think a lot of it was just confidence in like the melody,” and Alexis agrees, telling Tyler, “You gotta be confident.” Tyler laughs knowingly and says he will

practice tonight. Justin returns with another drum, and Whitney says, “We should have a drum break at the end.” Tyler leaves to get a tuner. They warm up and play independently for about five minutes. That dies down, then Tim plays the opening motive and instinctively the others join in. Tim eventually messes up and they stop. (The tempo is much slower than they have played it before.) Alexis asks, “Who’s gonna introduce us?” They discuss this with no clear conclusion.

Justin begins the drum beat from the beginning. Tim enters, plays four notes, stops, and looks at Justin. They assess the problem, try it again, and the same thing happens again. Justin explains, “I had to back off. That was on my comment sheet.” When it does not gel the third time, Tim says, “Something’s bothering me. I don’t know what it is. Something’s different.” Justin suggests, “I think we need to hear the song.” Whitney starts to freak out, “Oh my god! We’re playing this tomorrow! This is not time for a breakdown!” Unaffected, Justin says to Tim, “There’s definitely something but I don’t know what it is.” Without listening to the recording they begin again. Meanwhile, the winds discuss the performance; Whitney volunteers to give the introduction. The group attempts a run through, assessing what was wrong with no clear conclusion, and break into two conversations again.

Whitney comes back with her paper. Justin looks at it and explains, “It’s important for me to understand how the structure of the song works too.” Whitney responds, “I didn’t think that this would make any sense to you (laughs).” Justin says, “It does. I mean I don’t need to pay attention to that part,” (meaning the specific notes Whitney has written for herself to play) and returns to the drum set. Tim says, “Alright, ready?” This is the first time they have not started at the beginning, and it takes them a

while to decide how to do it. Justin begins playing. The tempo is still slow, and eventually they fizzle out. Whitney evaluates her own part, asking, “Was that better this time? Cuz I think I played it better. I got my paper now to make sure.” Alexis says, “Yeah.” Nick comes in and has them draw from a hat for their performance order. Whitney picks: they are second in the lineup. Nick leaves amid random chatter.

Tim regroups, “Can we start right there? We gotta get that part though. The one where we just ended.” Once they clarify when each person will enter, Tim looks at Justin and says, “Faster.” This time they get to the end at the faster tempo and rejoice at their success. Whitney assesses, “Now we just gotta make sure we come in at the right time . . . We should keep up with the faster tempo so that way I'm not running out of air every time we play that rhythm.”

After a lull, they go through the checklist for the final performance on the reflection form, Whitney reading each one and mostly the winds discussing them. Tyler, looking at the questions about peer feedback, asks, “Do you think you could go get the sheets for the judgment that they did on us?” Alexis leaves to get the forms. Whitney suggests that “Justin should do like a count off and then we bow.” Justin obliges and the winds laugh. Tyler and Whitney continue answering the reflection questions out loud. They talk and play randomly for about seven minutes then Whitney says, “Ok, um, we need to work on introducing ourselves.”

Whitney practices her introduction a few times; the more she does it, the more they all laugh. After a third try, Justin focuses them by playing the beginning of the song again. They run the song. The winds are all looking at paper on stands, and there is no eye contact between them and the percussionists. The tempo gets slower as they play. It

seems that each time, Tim takes more creative license with his parts but does not ever address it verbally. The bell rings during the middle of their run through but they keep going. They get through the song and end it as practiced, and Tim says, “Yeah!” They get up and quickly put their things away.

Final Performance

During That One Group’s final performance, they seem to perform it exactly the way they had ended it during Session 6. They sit in similar positions but more spread out than when they were practicing. Justin and Tim were seated further away from the three woodwinds who were seated center. All members faced the audience and there was little to no verbal communication between them. The woodwinds all looked at their notes on a stand.

Whitney introduced each group member, and stated the name of their song. Then Justin began the performance just as they had rehearsed, giving his drum cue to Tim to enter, and as he lowered his volume, Tim entered at the proper time. Next Whitney and Alexis entered with the opening motive. When it was time for the verse to enter, Alexis switched over and played along with Tyler. Whitney continued to play the opening motive but softer, allowing for the melody to play through. They kept their song together until the end and ended as they had planned: the winds stopped playing first, then Tim and Justin continued playing. Tim played a motive a certain number of times and then Justin took his cue and they ended together. Justin did not play a drum solo. After he ended, they all stood up, awkwardly looked at the audience, and left the stage.

Chapter 5 The Learning Process

While the previous chapter presented descriptions of each of the four cases, the next three chapters present a cross-case analysis and relate the findings to previous research literature. In this chapter, I analyze students' learning processes and their group dynamics. Chapter 6 will describe how students learned to play by ear and discuss the musical elements they dealt with. Chapter 7 will examine students' attitudes toward the project and the benefits they perceived from it.

The Learning Process

Students in this study worked within a constructivist learning environment based on informal music learning practices and student-centered learning. They worked collaboratively with peers to solve contextually-based musical problems. Other studies have examined informal music learning where students in music classes worked collaboratively to solve real-world musical problems and found that group members' learning methods appeared haphazard (Abramo, 2008, 2011; Campbell, 1995; Davis, 2005, 2008; Green, 2008; Jaffurs, 2004). Haphazard, Green noted, meant learning "skills and knowledge . . . in idiosyncratic and holistic ways, starting with whole, real-world pieces of music" (2008, p. 10). Specifically, she contrasted "haphazard" learning with systematic ways of learning, i.e., via scales and technical exercises. Similarly, students' learning processes in the current study appeared haphazard.

Four groups of five students each participated in my study; after Session 5, only 19 student participants remained as one student moved away. Group sessions seldom started with discussion of a plan of action. For example, at the beginning of a rehearsal, without discussion, someone in the group might start the recording, while a few members

listened distractedly and others warmed up or noodled around on their instruments. At some point, a group member (usually the group leader) might say something such as, “So, last time we figured out [x].” Or someone might ask, “Do you wanna run what we have?” or suggest, “I think we should work on [x].”

These types of comments would often start a group’s process of solving musical problems. I discuss musical problem solving in the context of the three components of problem finding, strategizing, and responding. *Problem finding* usually included mostly discussion to identify a specific musical problem that needed to be addressed. *Strategizing* largely involved conversations about what actions to take to resolve the issue at hand. *Responding* included doing the actions they took to work out the problems, such as writing, singing, listening, and playing. Sometimes groups looped these components; other times, they did not utilize all of them, or utilized them in a different order. The students worked in various groupings to solve musical problems: individually, in small sub-group collaborations, and with all five group members. I also discuss the roles formal peer assessment and feedback, and teacher scaffolding played in students’ learning processes.

Problem Finding

In this study, much of the problem finding that occurred happened when groups faced real musical problems within a musical context, i.e., for example, when they played a run through and fell apart somewhere in the middle. In this section, I discuss only problems that the students themselves identified. I do not include problems that I may have heard which the students did not seem to hear.

Each group took different amounts of time and pathways to find and solve musical problems, and some students contributed more than others to solving musical problems. These differences seemed to stem from variations in individuals' level of musicianship and leadership ability; Table 5.1 below illustrates my perceptions of individuals' skills in these areas. I categorized weak, moderate, and strong musicians based on:

1. Level of technical facility of their instrument;
2. Chair placement within the band;
3. Ability to read and play music accurately; and
4. Apparent confidence level in being "good" at their band instrument.

In addition to musicianship level, Table 5.1 also shows leadership abilities. I determined primary leaders as either:

1. Students who led the group's conversations and decisions most of the time; or
2. Students to whom other group members looked for guidance.

I determined secondary leaders to act in any of the following ways:

1. Students who gave a great deal of input or frequently expressed opinions to the primary leaders when the primary leaders were present;
2. Students who led the group's conversations and decisions when the primary leaders were absent; or
3. Students to whom other group members looked for guidance when the primary leaders were absent.

Table 5.1

Perceived Musicianship and Leadership Ability Levels

Group	Weak Musicians	Moderate Musicians	Strong Musicians
Rolling	Tori	Haley Emily	Alyssa* Rachel**
Revolution	Shannon Chris	Kayla**	Clayton* Brittney*
Rikki	Cody**	Jake Michael	Scott* David
Kids	Whitney ** Alexis	Tyler Justin Tim**	

* Depicts primary leader

** Depicts secondary leader

Problem finding and solving occurred at different rates, sometimes immediately and sometimes delayed; at other times, students did not succeed in finding or solving specific problems. First I discuss how students, especially primary and secondary leaders, found and solved problems immediately and then I discuss situations when the problem finding and solving took longer and was, therefore, delayed. The cases in Chapter 4 offer examples of times when problem solving was immediate and when it was delayed.

Immediate problem finding and solving. Immediate problem finding meant that once someone in a group discovered a problem, they did not get sidetracked from it by a long lull, distracted conversation, or moving to another problem; rather, they focused on that problem until they solved it. However, this “immediate” problem finding and solving may have taken much longer in these student-led groups than it might have, had a teacher solved it for the students. Most of the primary and secondary leaders were often able to both find and solve some problems immediately for their groups. For example, after

completing a group run-through, individuals or sub-groups in this study might begin to immediately practice a part that they had played incorrectly, without discussing it, as if they had assessed in their heads what they needed to fix within their own parts, and figure out what the problem was. Because secondary leaders either showed no initiative at the beginning of the project to lead their groups, were not appointed leaders in the band, or did not appear to me to be very confident musicians, I was surprised when secondary leaders were able to find and solve problems immediately. This excerpt from a video transcript of the Kids group during Session 3 showed how secondary leaders, Whitney and Tim, worked in different ways in small sub-groups to find problems immediately while the others followed their lead. Tyler worked independently to solve problems in his part while the others worked collaboratively on other concerns.

Alexis and Whitney are counting measures until the time they are supposed to come in with their motive.

Whitney: 17!

Then she writes it down. Tim continues playing his octave motive on vibes. He is also controlling the recording and he plays the recording where he needs to hear his own part. Tyler plays his part as he hears it on the recording. Tim does not seem to be taking into consideration that Tyler is trying to work on the verse melody. Alexis and Whitney count the measures again and then come in when they are supposed to. Tyler continues to play the lyrics and gets more and more notes each time. Justin plays along to the recording on drums and Tim sometimes plays his part but sometimes just stops and listens. Though everyone is playing along with the recording (what they can hear of it – it is coming from internal speakers on Tim's phone), they all seem to be playing independent of other people.

Cody from the Rikki group worked similarly within his group. Although neither Cody, Whitney, nor Tim identified themselves as strong leaders, I identified them as secondary leaders (see Table 5.1) because they worked hard to find problems in the project and helped their groups progress forward.

The primary leaders usually worked in a similar manner as the secondary leaders in the excerpt above to find and solve problems for their groups while the weaker members seldom commented. The following excerpt from a transcript of the Rolling group during Session 3 illustrates how the stronger musicians, Rachel and Alyssa, utilized constructive feedback and questioning to find and solve group musical problems:

Based on their previous run-through of the song, Rachel assesses that there was a problem because they were unable to get through the entire song. She figures out the problem stating, “right now, we’re like missing fingerings,” then adds, “Well we have to have a finalized version by the end of the day today . . . Wanna run it?” There is an awkward silence until Alyssa asks, “Can we hear just the very beginning?” Rachel agrees. They listen to the recording again. Some group members noodle along as the recording plays on while others listen intently. When it ends, Rachel nudges, “Ready?” When they play it this time on their instruments, they get through the segment that they had fallen apart in before. They got more correct notes and were able to play more of it correctly.

In this example, Rachel identified the group’s problem immediately by stating that there were fingering problems within a certain section of the song. When they responded with the action of playing the recording again, each person was able to do what she needed to do in order to figure out more fingerings to her part, whether it was listening purposively or noodling along with the recording, to solve some of their fingering problems that Rachel had pointed out.

Delayed problem finding and solving. When students were not able to immediately find problems, problem finding was somehow delayed. Every group experienced lulls in conversation or activity to different degrees at some points in the project. Delays in problem finding usually occurred when group leaders were either otherwise engaged in finding a problem for a specific part and others were waiting or when the leader was absent or focusing on something other than the group’s forward

progress. When lulls occurred, group members sometimes appeared to sit idly until someone would either strategize or respond by performing an action that would spur them forward in the same problem or in a new direction. Other times, off-task conversation would occur until eventually a group member got them back on track again. In Revolution's Session 5, the group members began discussing how many verses they would play, but they experienced first a lull and then a change of direction:

Brittney: Are we just playing the whole song? We're ok with that?

Clayton: I think we're fine with it, either cut out the solo and play it or cut out the second verse.

Kayla: We should cut out the third verse.

Clayton: It's not a very long song.

They appear to sit there a few seconds and do nothing.

Kayla: Well, are we keeping the third verse anyways or . . .

Clayton: Yeah.

Brittney: Yeah. I feel like we don't really have to play anything. I say you just play whatever you want. Put your signature on the solo part.

Kayla: that's the problem. I don't feel like figuring out the notes . . . but anyways . . .

Kayla and Brittney talk more about her notes for her part, then Brittney and Clayton have to leave for club pictures. Kayla does not continue the discussion about the number of verses with Whitney and Chris (the two still there), but instead they listen to the song several times. They then sit idly for about half of the time Brittney and Clayton are gone—they do not seem to know what to do to further the group's progress. When Brittney and Clayton come back 15 minutes later, the conversation turns to the song's key. They discuss key and a couple of other problems, and finally return to discussing how many verses to play about 15 minutes later, at the very end of class.

In this excerpt, the group members finally decided to cut the third verse as their last decision of the day. But this decision was delayed because they had a lull in forward

progress and moved on to discuss several other issues before returning to solve the original problem of how many verses to play.

Feedback as problem finding. The feedback group members provided after they performed an action was often how they discussed problem finding. As students found problems, their feedback usually came in three forms: constructive, positive, or unconstructive feedback. Constructive feedback was the helpful comments students made as they found problems; these comments were the ones that helped them actually solve musical problems. As evidenced in the previous excerpts, these were comments such as when Whitney discovered there were 17 measures of rest before she and Alexis were supposed to enter, when Rachel told her group, “right now, we’re like missing fingerings,” or when Clayton suggested to his group that they “either cut out the solo and play it or cut out the second verse.”

I considered positive feedback, whether specific or non-specific, to be comments students made when they believed they had successfully and correctly performed an action and solved a problem. Students sometimes provided positive comments as they decided that a problem had been solved, most frequently in the Kids and Rikki groups. However, it was rarely specific and was often in the form of comments like, “That was it!” versus a more specific comment like, “We kept the tempo steady throughout that section.” Overall, group members did not give nearly as much positive feedback as constructive feedback throughout the project. Positive comments were more prominent toward the end of the project when students seemed to feel like they were achieving some degree of success and when they could better assess that their run throughs were overall sounding good to them, and they had solved a particular problem they were working on.

Unconstructive feedback occurred when students were unable to provide specific helpful comments when discussing problems; these comments were unhelpful because they were usually general or demeaning to another group member and contributed nothing to solving a problem. Only the Revolution group tended to give unconstructive feedback. For example, instead of helping Chris or Shannon figure out and solve their issues, Brittney made fun of them or talked down to them by saying things like, “Those are not the right notes” with what sounded like a condescending tone. Though she assessed and found the problem, she was unable to strategize and help them find the right notes. I did not hear the other three groups offer unconstructive feedback that may have sounded demeaning to other group members.

Strategizing

In their process of solving musical problems to create and perform their arrangements, once group members found a problem, they often strategized by *talking about* what they should do next (responding) to solve that problem. They strategized about how to divide up parts, how to work on parts, how to work on “getting the notes,” whether to listen to the recording or do something else, what version to listen to, whether to just listen or to play along as they listened, and where to start the recording. Sometimes strategizing was quick because group members were able to easily agree on an action that might help solve the problem at hand. Other times, strategizing was difficult and laborious because group members were unable to agree on what action to take, or because they were unable to agree on the musical problem to focus on next. Groups also strategized about whether and when to rehearse outside of class as well as what to do next in rehearsal, although they rarely followed through.

All groups had times during sessions where they worked quickly and successfully at problem finding, strategizing, and responding with an agreed-upon action. The following excerpt is an example from Session 2 of the Rikki group when a sub-group was able to do several actions in sequence because group members (in this case Cody, Michael, and Jake) simply said to do something and the others responded and did it; Scott and David were not part of this problem finding discussion because they were otherwise engaged.

Cody listens to Jake play his drum part while Scott and David oil their trombones.

Cody: Yeah, you guys play it. Michael play your [bass part] and Jake you play that.

Michael comes in, playing what Cody told him to play but stops after a couple of measures. There is some talk about coming in on the “and” of 1. Michael then enters on the “and” of 1, coming in as Cody claps the tempo and counts them off. Jake plays the line but not in Cody’s tempo. Cody starts clapping the beat and keeps on until Jake comes in with the melody rhythm. Then Michael enters on time but stops shortly.

Michael to Jake: Play my part real quick and we’ll see if it’s on the downbeat or the offbeat.

On his drum, Jake bangs out the rhythm of what he thinks Michael’s part should be. Then Michael plays the melody again on his instrument and Jake plays a rhythm to go with it and they are grooving together this time.

Groups did not always agree so quickly on which action to take next. They may have taken more time to come to their agreed-upon strategy because several group members made different simultaneous suggestions. In Revolution, Clayton and Kayla sometimes would easily agree with Brittney about what to do, but other times they would make another suggestion. Then they would talk until they eventually settled on a tactic. Often when this happened, however, the person whose tactic was not taken would be noticeably irritated but would ultimately succumb to the others’ plan. For example,

during Revolution's Session 5, Brittney, Clayton, and Kayla discussed the problem of whether or not to play two or three verses. However, Kayla was more concerned about how to learn the improvised section that the others assigned to her. Because Clayton and Brittney wanted her to include it in the arrangement, they suggested general strategies for what she should play, but they did not offer specific strategies to actually help her learn it. Ultimately, they all had different ideas for how Kayla should proceed in learning her new part, and Clayton and Brittney, unconcerned that she might not be able to learn it, moved on to other problems. Meanwhile, the other two group members, Chris and Shannon seemed to be completely uninvolved.

When students were unable to agree on a strategy for how to solve a problem, a lack of focus or lack of forward momentum often resulted. For example, in the transcript from Session 3 in the Rolling group:

Emily initially plays the full version of the recording with all parts included. Alyssa plays along to it. Tori plays one note then stops, and Rachel plays along with the bass line part. Emily stops the recording abruptly but does not say why. Rachel tells Emily that she needs to hear the bass part again. After a few seconds, Emily begins playing the recording again with just the bass and drum lines. She stops the recording after only a few seconds of listening. While Rachel and Emily talk about the bass part, Tori and Alyssa already know their melody part, now missing from the recording, and appear to idly noodle. I cannot hear Haley playing, so I am not sure what she is doing. After about 20 seconds of this, there is a slight lull in activity where all are silent for a few seconds. Then I hear Tori begin practicing alone again; next Rachel begins to practice on her own. Emily plays the recording of just the bass track again, and Tori stops playing. All I hear is the recording. They all seem to be listening to it but I am not sure what they are listening for.

This excerpt illustrates a lull when one group member (Rachel) initially found a problem and wanted to work on that particular issue and while doing so, the other group members (Alyssa, Tori, and Haley) did not seem to be making forward progress on their

own parts. Because no one had a solid plan for what to do next, they all just started noodling around on their own until Emily played the recording of just the bass track, though it did not seem to be the recording that Alyssa, Tori, and Haley needed to hear, since they were not playing the bass part. But instead of derailing what Emily and Rachel were apparently doing, the others sat and listened to the recording. Later on during that session, after they had worked through other problems, Alyssa, Haley, and Tori were able to work out the parts they needed to work out by listening to the full recording. Although not following a very direct path, as these group members continued to strategize to learn their respective parts and create their arrangements, these problems were eventually solved.

All of the groups got off task at some points, usually when there was a lull in forward momentum either due to inability to immediately find problems or to agree on a strategy, or when they stopped to talk about rehearsing outside of class, or even to talk about other bands they listened to (as Justin and Tim did during Session 5). Green (2008) discussed teachers' concern that students in her project would get off task or "muck around," but she noted that by the end of Stage 1, the teachers were already changing their opinions because they saw that "students' motivation rose quite dramatically from the start, and that they applied themselves to the task more than expected, and more than usual" (p. 114-115). Green suggested an alternative perspective on what teachers and observers perceive as off task behavior:

It is tempting for teachers and observers to regard pupils as 'off task' at times when, if viewed from a different perspective, the case might appear very different. What we as educators count as being on task does not necessarily correspond with the musical aims that pupils identify for themselves, nor the paths which lead most directly to the achievement of those aims. (p. 116)

In the two excerpts above, with the Rikki and Rolling groups, teachers might be worried that not everyone in the group appeared to be on task, and that the groups' rehearsal methods were inefficient. Those discussions, though they took a significant amount of their time, seemed to be much like what Green identified as part of the students' processes for learning their song. Perhaps had a teacher been present to scaffold the process by asking questions or making suggestions, groups may not have had lulls in activity, gotten off task, or have had these discussions as frequently or for as long. Though we may have even thought they were taking too much time to talk about things like this, as Duke (2012) suggested, perhaps these "muddling" discussions were integral to their learning process and teacher feedback or scaffolding may have been counterproductive.

Responding

Another of the three components students used in creating and learning their arrangements was responding. I use the term "actions" to refer to responses students made to their agreed-upon strategies. The ways students responded included practicing in various configurations, listening, writing, and singing. Students did not always seem to need to talk about what the problem may be (i.e., problem finding) or what to do next (i.e., strategize); they would sometimes follow up one action with another with no talking in between. This is similar to others' findings about communication within rock bands (Campbell, 1995; Green 2001; Jaffurs, 2004) and within small group work in music classrooms (Abramo, 2008, 2011; Allsup, 2002, 2003; Davis, 2008, 2010; Green, 2008), where participants may or may not have required talking to achieve their musical goals.

Practicing. To analyze the students' practice patterns, I listened to each recorded rehearsal and counted how and how often each group practiced. Table 5.2 shows that they used four practice configurations.

1. Full group practice with the recording (GPR)
2. Individual and small sub-group practice with the recording (ISPR)
3. Full group practice without the recording (GP)
4. Individual and small sub-group practice without the recording (ISP)

Group members often seemed to go back and forth between individual and sub-group practice both with and without the recording quite often, so for this analysis, I grouped these together as one practice configuration. The shift between individual and small sub-group practice was not always discussed as group members often went from one action to another to solve an issue. This is similar to prior research on informal learning in which students tended to play or noodle around instead of talk about a concept in order to figure it out (Abramo, 2008, 2011; Davis, 2008, 2010). Table 5.2 also demonstrates that groups or individuals largely started practicing from the beginning of the song. In the table, therefore, I specified the few times when they started somewhere other than the beginning. "Attempts" indicates that they started to practice a section but stopped prematurely.

Table 5.2

Frequency of Practice Formations for Each Session

Session	Type of Playing	Rolling	Revolution	Kids	Rikki
2	ISP	1	3	16	15
	GP	4 (attempts)	2 (attempts)	0	7 (attempts)
	ISPR	6	3	15	1
	GPR	1	0	0	0
3	ISP	6	3	6	16
	GP	0	0	0	1 (attempt)
	ISPR	8	3	14	3
	GPR	1	3	0	1
4	ISP	3	4	3	21
	GP	4	3	4	7
	ISPR	1	0	3	4
	GPR	5 (2 not at beginning)	0	3	1
5	ISP	6	3	4	15
	GP	5	6 (1 not at beginning)	0	3
	ISPR	2	0	6	2
	GPR	0	0	0	0
6	ISP	9	5	6	17
	GP	18 (13 not at beginning)	6 (4 not at beginning)	11	11 (2 not at beginning)
	ISPR	0	0	0	0
	GPR	0	0	0	0

* GPR depicts full group practice with the recording

ISPR depicts individual and small sub-group practice with the recording

GP depicts full group practice without the recording

ISP depicts individual and small sub-group practice without the recording

Full group practice with the recording. All groups utilized full group practice with the recording the least of any method. This method occurred during Sessions 2, 3,

and 4 within all of the groups as shown in Table 5.2. Beyond Session 4, their arrangements no longer followed the exact form of the recording.

Individual and sub-group practice with the recording. Students seemed to go between individual and small sub-group practice almost seamlessly in their session rehearsals, as part of the same interconnected process. This method occurred with most people in each group in Sessions 2-5. The Rikki and Kids group members played with the recording much less than others, perhaps because their speakers were not loud enough for them to hear the recording while playing along. Within the Rolling, Revolution, and Rikki groups, the moderate and strong musicians used this method much more than the weaker musicians. The Kids group often had the recording playing in the background while they played out of sync with it and with each other. This group's members seemed to feel most free to noodle around and practice whatever they felt they needed or wanted to practice individually or in small sub-groups, maybe because they did not have a strong leader like the other groups to direct their activity.

Sub-group practice with the recording often occurred concurrently with individual practice throughout the sessions. The strong and moderate musicians in each group used sub-group practice with the recording as a major method of learning parts early in the project. After noodling on their own, group members who played the same parts would play sections of their parts together along with the recording and work together to learn more of their parts. As the project progressed, they used this method less frequently. The weaker musicians mostly utilized this method when a stronger or moderate musician asked a weaker musician to practice their part along with them.

Individual and sub-group practice without the recording. Students seldom discussed the action of practicing individually without the recording. They simply practiced their own parts as they felt the need, noodling around and working out notes and parts. This type of practice occurred in every session from every group, and from almost every group member. When there was a lull or they did not know what else to do, it seemed that they just played without any actual aim of improving anything. Most of the time, however, it seemed they practiced to improve something, such as fixing notes or figuring out how many times to play a phrase.

Individual practice without the recording occurred most often with Rolling and Kids, with a lot of simultaneous activity: some people playing, some talking, or the recording in the background with no one paying attention. To an observer, this may have seemed like organized chaos. However, the playing that was occurring was not chaotic—the group members were usually practicing something they felt they needed to work on. Other times, they would play a part they already knew, perhaps either to solidify it or simply because they already knew how to play it.

Shannon and Chris in the Revolution group and Tori and Haley in the Rolling group seldom took the initiative to practice on their own, and largely learned their parts via small sub-group collaboration where stronger musicians worked with them. These weaker musicians' lack of action or initiative made them appear disengaged, irritated, or bored. With the exception of these individuals, everyone else learned their parts largely through individual practice during class, perhaps because they felt comfortable among friends or because they were excited or focused on figuring out their parts.

The individuals who noodled freely on their own rarely asked others whether or not something was correct. It often seemed that they were in a state of concentration, determined to figure out their own parts. For example, Scott and Michael tried to help Cody learn his parts by asking him questions, yet when Cody played incorrect pitches, they never told him he was wrong. Group members also rarely critiqued each other as they practiced individually unless it was to congratulate them on something that they thought was particularly well-played.

Sub-group collaboration was generated in two ways: most often by group members who played the same part organically working together, and less often by group leaders who noticed that certain individuals needed help. As an example of the former, when Whitney and Alexis were each working on the opening motive, they began to talk to and play with each other to work out their parts. Sometimes Whitney and Alexis would ask others for help, as when they asked Tim to play the motive on vibraphone so they could hear it. An example of ways stronger musicians often helped weaker musicians is in the Revolution group: when Clayton realized that Chris had not learned the bass part, he tried to help Chris match each note as pitch as he played it. It was the same in the other two groups.

Full group practice without the recording. Table 5.2 shows that full group practice without the recording occurred more often in the later sessions. In the first three sessions, when students attempted to play together, they usually only played a few notes before stopping. By Session 4, every group was able to at least play through the majority of their song without the recording. The strong leaders in Rolling and Revolution led group practice without the recording more often than the other two groups. None of the

groups were very successful at playing to the end of their arrangements until later sessions, probably because they spent most of the previous sessions learning their own parts and trying to determine the form of their song. In Session 6, the main focus for every group was “How are we going to end it?” Prior to Session 6, groups spent little time on this detail. All groups attempted several full run-throughs of their arrangement during the last session.

Listening. Similar to participants in Green’s (2001, 2008) prior studies of informal learning, each group in my study listened in two ways. Green identified these as purposive and distracted listening. All of the groups in my study listened to their recordings purposively, with a specific focus for their listening, especially in the beginning. They first listened to hear the different layers that made up their songs, and once they were able to decipher them, they listened to decide which parts to play and how to divide them. They also listened to discern the song’s form. In addition, it seemed that when they rehearsed with their full groups, or practiced with small sub-groups or individually, at least some group members listened to each other purposively. By doing this, they were able to find problems. For example, had Haley in Rolling not been listening purposively, she would not have been able to decipher that their arrangement did not seem to have dynamic nuance she heard in the recording.

At times in all of the groups, some members played along with the recording while others sat and listened purposively. They often played along to the parts of the song they knew, then stopped playing and listened purposively to the parts they did not know. Sometimes the whole group would play quietly while listening to the recording. For

example, in the Kids group, most everyone played and listened at the same time, each with an individual focus based on what they felt they needed to do at that moment.

Each group did a good bit of distracted listening to the recording as well, i.e., listening to the song with no specific focus. This occurred more often during the beginning of the project and less toward the end. The music often seemed to be playing in the background in the Kids group sessions while they talked and played over the recording, though they did not seem to be listening to anything in particular. They also listened in this way when they were filling out reflection forms at the end of class or, at times, when they could not think of anything else to do.

As they became more and more familiar with the song, every group listened to the recording less and less. By the last session, none of the groups listened to their song via recording devices but spent most of their time playing as a group, strategizing, and problem finding to work out final details.

Writing. In this study, one or two people in each group responded with the action of using some form of notation to help them remember the song. Individuals ranged from writing notes and rhythms using traditional notation, to writing in a short-hand of letters or rhythms, to writing nothing. I have provided all of the writing examples that student participants gave me at the end of the project in Figures 5.1 – 5.6.

2:42

(A) 1 Play rhythm 3 times G A B D E #F E D B A

(B) 2 rhythm 1 time G A B D G A ^{low} E G

16 measures of rest

AAAB

Figure 5.1. Whitney's writing sample from Kids.

EEEC EEEEGEC EEEEC EEEEEVG

(WAIT) EEEEGEC EEEEC EEEEEEC

Chorus

[EEEE EEEEGEC EEEEGEC GEC]

Chorus

EEEC EEEEGEC EEEEC EEEEEEC

EEEC EEEEGEC

No D's

(EEEEEEEEEEDEEE EEDFD EEEF)

Chorus

Chorus

Figure 5.2. Tyler's writing sample from Kids.

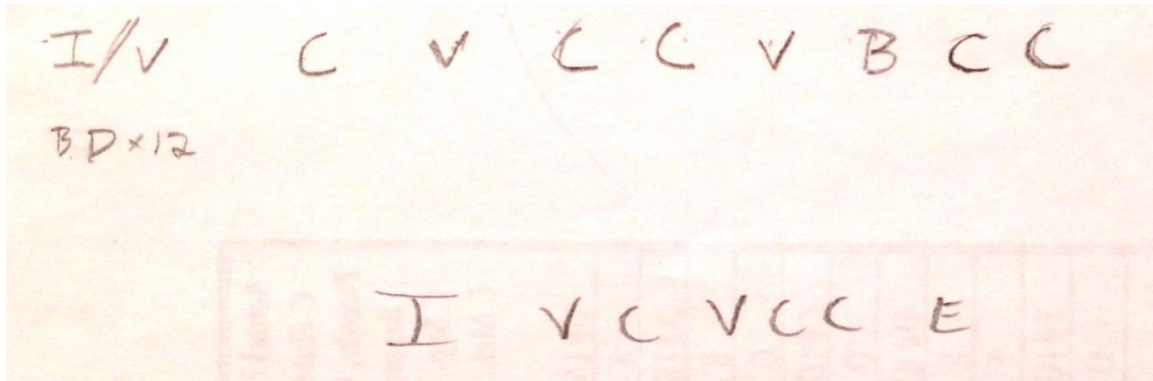


Figure 5.3. Rachel's writing sample from Rolling.

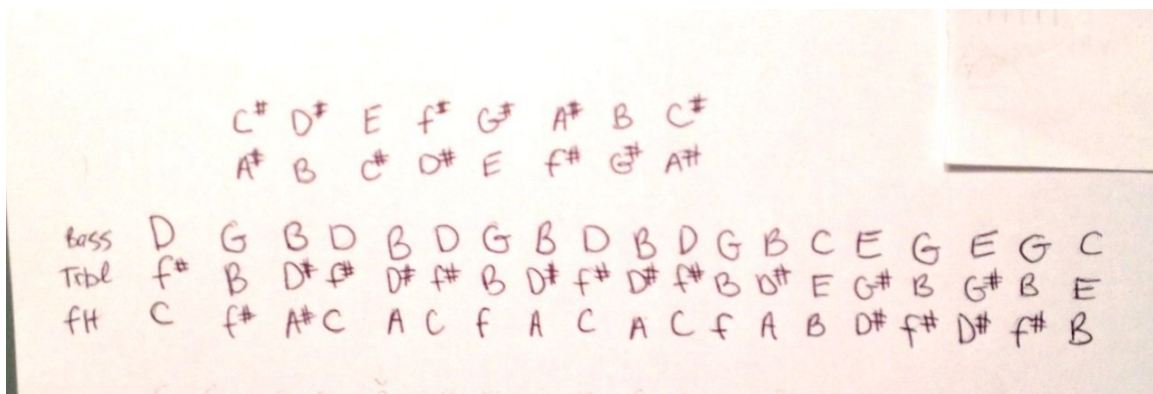


Figure 5.4. Brittney's writing sample from Revolution.

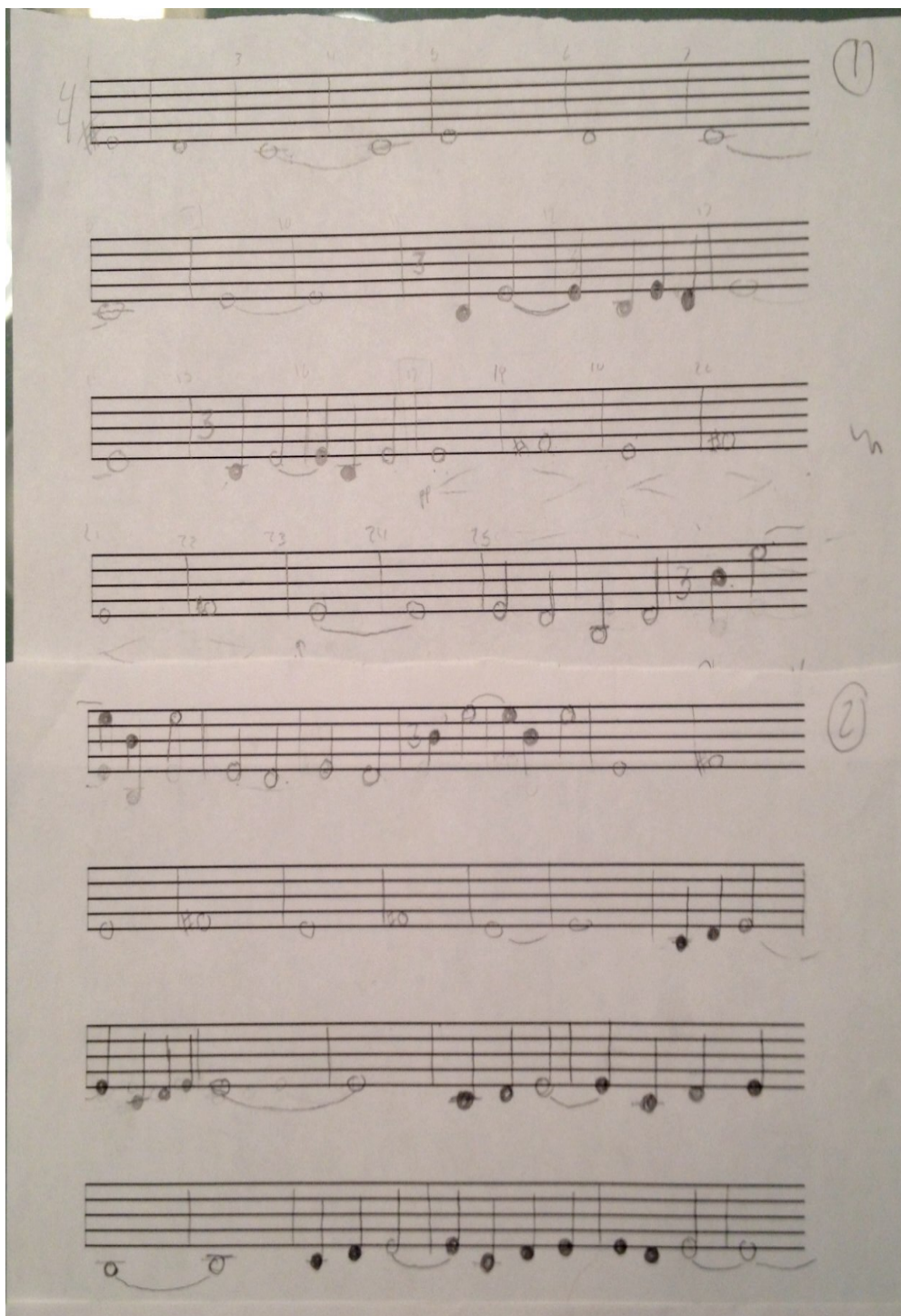


Figure 5.5. Kayla's writing sample from Revolution.

Participants most often wrote music for their own parts rather than for the group. Though I included only two, Kayla wrote three full pages and numbered each page (Figure 5.5). Cody wrote on two pages (Figure 5.6), but instead of writing his part from beginning to end, he notated each of the motives he would be using, apparently for reference, writing the form at the bottom to help him remember where and when to play each motive. Both Cody and Kayla used their notated sheets in the performances. Other participants wrote their parts using short-hand letters. Brittney (Figure 5.4) wrote out the bass, treble and French horn notes. I am not sure exactly what all of the notes signify or how she used them, but perhaps she had to think through others' parts in order to decipher the correct French horn transposition. As evidenced by his writing (Figure 5.2) and by his comments during sessions, Tyler was concerned with getting the correct number of E's that the singer was singing, so he meticulously counted how many were in each phrase. He wrote "Wait" to show his rests, and noted when to play the "Chorus," though he did not label the verses.

Only three participants wrote down the form of their arrangements. Rachel wrote hers for the good of the group, constantly referring to it to remind them of the form (Figure 5.3). Whitney (Figure 5.1) and Cody (Figure 5.6) also wrote down the form, though it seemed to be only for their own use and not for their groups. When other group members asked to see their papers late in the project, Whitney and Cody were both quick to say that they did not think anyone else would understand it, though they did show them. It seemed to me that, for run-throughs and performance, the groups with written reference for their song's form were more confident in where to start and end their arrangements. In particular, the Revolution group, with no written references to form

(Figures 5.4 and 5.5), did not perform the “structure” that they had rehearsed, resulting in the least successful performance.

Some group members wrote things down during the sessions but did not use them for the final performance. In the Rikki group, David wrote down several ideas in the beginning, and he and Scott referred to the paper several times during sessions. When David moved to a new school, Scott inherited David’s notes, which proved helpful for Scott, as they seemed to include pitches for his part, ideas for the form, and division of parts for the group. I attempted to retrieve the paper from Scott, but by the time of the performance, he did not have it anymore. Michael also wrote down a few notes in the beginning, but he did not refer to the paper for performance and I was unable to collect it.

Several group members in the current study did not write anything down, which is similar to Green’s (2008) findings that students did not use notation to remember their songs. Alyssa seemed to be confident in learning and memorizing her parts and apparently did not feel the need to write anything down. None of the percussionists notated anything. Some weaker musicians never wrote anything, and seemed to wait for others to tell them what to play.

Singing. Singing occurred in every group, but to different degrees. It was intermittent, not discussed, rarely to learn parts, and usually not along with the recording. Group leaders usually were the ones who sang, often when strategizing, to illustrate a specific part. For example, Clayton in Revolution often said, “Let’s start here...” and sang the part, as did Alyssa and Rachel in Rolling and Scott in Rikki.

Scott also sang parts of the song seemingly at random, as if he simply enjoyed singing. Brittney and Kayla in Revolution admitted to singing their song in the car as they

rode to and from school, though they were not doing it specifically to learn the music.

The only two group members who sang their parts to learn them were Cody (Rikki) and Tim (Kids); both participants' singing occurred spontaneously, without discussion, and quietly to themselves, as they listened purposively to the music and figured out their parts.

Formal Peer Assessment and Feedback

Students had the opportunity to give written peer feedback to two other groups during a more formal assessment in the practice performance (after Session 5). When Nick and I introduced the peer feedback forms (Appendix K), we told students not to write vague comments like, "That was good," or "That was bad," but to be specific about which musical aspects were good or needed more work. Most of the written feedback was either positive or constructive with very few unconstructive comments. Because I was not able to collect these feedback forms, I collected this data from recordings of the discussion students had about the feedback forms after the practice performance and during Session 6. From the ten-minute practice session directly after the practice performance, I was only able to obtain a recording of the Rikki group's conversation. To the statement, "One thing I think the group could improve upon is," written peer comments for the Rikki group included:

- "Move (dynamically) around. Get louder and softer. It was all just sort of loud and in your face."
- "You could work on knowing which part comes in when and when it stops."
- "The song just ended. You might want to work on your ending. You could work with dynamics a little more as well."

- “Trumpet and trombone tuning, timing, dynamic contrast, and ending”
- “More definite ending; confident entrances”
- “Communication between members; tuning”

In their conversation during Session 6 group members discussed their feedback in non-specific terms, summarizing their strengths and problems based the comments. For example, Kayla summarized for her group that, based on the comments, one of their major problems was confidence. Perhaps the peer feedback may have been more helpful had we as the teachers required all students to read the comment sheets and focus on one or two specific comments that their peers suggested.

Teacher Scaffolding

Wood, Bruner, and Ross (1976) used the term “scaffolding” to refer to the support experts provide for novices’ learning, until novices can perform completely independently. In a constructivist learning environment, Wiggins (2009) stated that “the primary role of the teacher is to provide scaffolding for learners, enabling them to operate within their zone of proximal development, resulting in their achieving a higher level of understanding and competence in music” (p. 53) than they could without support.

In order for teachers to scaffold student learning, they must identify what students do and do not understand, to determine when they should and should not provide scaffolding. Although I intended for Nick and myself to be hands-off, in analyzing the data I discovered that we scaffolded student learning several times during the project, through statements, comments, questions, and suggestions based on our assessment of groups’ progress. No groups asked me for feedback, and I am not sure whether they asked Lauren. Nick scaffolded learning a couple of times when students asked him for

help. The Kids group members asked Nick to help them find a note, but he ultimately simply watched them work and they were able to solve their own problem. The Rolling group asked him to help them build their final chord for their arrangement, and he directly addressed their concern and helped them figure out which note to play to make it sound balanced.

I gave unsolicited feedback to each group at least once. I asked questions or offered suggestions if I saw they were unable to articulate a problem but did not give specific expectations. I also discovered that I scaffolded learning through the reflection forms. I created each week's reflection form based on my observations and transcriptions from the previous session, intending to be reactive rather than proactive in attempts not to lead the students' rehearsal procedures. However, transcripts of the sessions showed that the questions I asked guided students' thinking more than I anticipated, leading groups to conversations about how to find and solve problems.

More formal teacher feedback occurred during the practice performance. As Nick, Lauren, and I each listened to groups' practice performances, we gave constructive and positive feedback by filling out feedback forms for each group. We also provided a few verbal comments at the end of each group's practice performance. Although I do not have recordings as data, these comments may have served to scaffold student learning during the next session as they discussed our feedback along with peer feedback they received. This supports prior research in constructivist music classrooms that suggests that teachers may need to scaffold emergent ideas that students have in order to further facilitate student learning (Davis, 2005, 2008, 2010; Davis & Blair, 2011; Scruggs, 2009; Webb, 2012).

Discussion of the Learning Process

Students utilized all three components of the learning process—problem finding, strategizing, and responding—as they worked. They also utilized feedback and scaffolding from peers and the teachers. Problem finding and strategizing were components students used when they needed to talk about certain issues, and they responded with actions to create and learn their arrangements, more so than talking. However, students tended to communicate verbally with each other more than the popular musicians in other research (Campbell, 1995; Lilliestam, 1996). Students in my study organized their work in ways that were more haphazard than structured, similar to other studies of informal music learning (Campbell, 1995; Davis, 2005; Green, 2001, 2008; Jaffurs 2004).

Verbal and nonverbal communication. Researchers who have studied how popular musicians learn music aurally have noted that these musicians communicate mostly through nonverbal gestures, eye contact, and active listening (Campbell, 1995; Green, 2008; Lilliestam, 1996). Lilliestam (1996) discussed the notion of communicating through formulas, or “characteristic musical motives or patterns which ha[ve] a recognizable core” (p. 203). He stated that, “Formulas are requisites for musical communication and they make it possible for musicians to play together because they provide a common musical language” (p. 204). Students in my study communicated via playing in various configurations, using what seemed to be a musical language familiar to them. As they performed actions of playing or practicing together, they did not always need to talk. However, Lilliestam (1996) said almost nothing about his participants communicating via talking, whereas students in my study talked frequently to find

problems, strategize, and solve problems. Similarly, Campbell (1995) mentioned that the musical leader in the group she observed led the group mostly through demonstration with only “occasional verbal remarks” (p. 18). In the current study, both talking and performing actions seemed to be necessary in order to create and learn their arrangements. Though students in the current study frequently utilized responding via actions to create and learn their arrangements, they utilized talking more than the members of the garage rock bands in prior studies. However, like with garage rock bands and informal music learning studies within schools, the actions were the component that led to students actually creating and learning their arrangements.

In a study of a democratic environment within a band classroom, Allsup (2002, 2003) noted that the students in his study communicated both verbally and nonverbally. He noted that, when the group stopped playing together, one group member started talking to the group members to strategize about how to proceed with the group’s composition. Students in the current study seemed to communicate similarly, playing in some configuration but stopping when needed to discuss something, whether it was to find a problem or to strategize about how to move forward, thus scaffolding each other’s learning through verbal communication.

Wiggins (2009) stated that in a constructivist classroom, students need to be able to express ideas in other ways besides verbal communication, “such as gesture and movement, graphic representation, musical expression such as singing, visual expression such as drawing, and so on” (p. 68). Previous research on popular musicians noted that they wrote down the words to songs (Campbell, 1995), wrote notation as a “memory-jogger” before a group rehearsal session, or they notated ideas and instructions for

themselves during a session (Green, 2001). In contrast, Green's (2008) research on students in general music classrooms noted that students did not write anything down as they recreated songs, perhaps because they were not formally educated musicians. Abramo (2011) stated that, "Except for one rehearsal where Michelle wrote some pitches without rhythms on the whiteboard in treble clef to help remember a lick on her saxophone, the participants never used standard notation" (p. 34). Even in a traditional elementary band class, Davis (2008, 2010) did not indicate that beginning instrumentalists wrote anything down as they learned songs by ear. Allsup's (2003) research on band students working in an informal setting to compose their own songs also indicated that when students tried to use traditional notation, this process "hindered development" of their musical ideas (p. 32). In my study, however, at least one person in each group chose to write down something as they created their arrangements.

Working with peers. A major tenet of social constructivism is based on guidance through the zone of proximal development via "adult guidance" or with "more capable peers" (Vygotsky, 1978, p. 86). In interviews, most participants in my study spoke about the fact that they felt working with their peers made it easier to do the task at hand. Green similarly (2008) noted that some students in her study preferred being taught by a peer than a teacher.

Similar to constructivist ideas of the value of collaboration with peers (Bruner, 1960; Rogoff, 1990; Vygotsky, 1978; Wiggins, 2009), students in my study spent a large portion of time individually and in small sub-groups, followed closely and perhaps spiraled with individual practice, full group rehearsal, listening, and writing, to solve musical problems as they arose. Wiggins (2009) noted that in a constructivist classroom,

when students work together to solve real-world problems,

they learn even more than they might learn working alone because they benefit from the perspectives that others bring to the situation. Interacting with others provides them with a wider range of alternatives and possibilities, helping them see things in a way they may not have thought of on their own. Solving problems in collaboration with others provides opportunities for students to expand their palette of choices of procedures and contexts. (p. 67)

In a student-led environment, she stated that students might “adopt many of the roles generally performed by the teacher in whole group settings . . . such as modeling, correcting errors, offering praise, assessing the need for help, anticipating needs, and providing scaffolding” (p. 57). Similarly, students in the current study took on those roles when they either communicated verbally or through musical actions when working with their peers to create their arrangements and learn their parts.

Allsup (2002) noted that, “because performing music is a social activity, learning music might best occur in an informal, social context” (p. 7). Due to the informal nature of my project, students took advantage not only the opportunity to work with their friends, but also the opportunity to practice individually and in sub-groups as needed. As they worked together, they scaffolded each other’s learning, addressing problems immediately, which perhaps helped them solidify their corrections more quickly. Also, because most group members provided input, these multiple perspectives helped them to not only find multiple problems, but to decide which problem to address immediately, which to deal with later, and which strategies they would use to solve those problems. These findings support previous research that learners construct their knowledge via interaction with peers in social contexts.

Teachers who lead large ensemble rehearsals generally do not offer the flexibility

for students to stop and practice a passage in the moment with their peers, as students were able to do in this project. Though teachers may allow students to work with their peers during class by interspersing small group learning in terms of sectional rehearsals, they generally utilize full group playing as the primary method of learning music in traditional band classrooms (Allsup & Benedict, 2008; Duke, 2012). They may expect students to come to class having already practiced their individual parts so that the large group's focus can be on rehearsing together. However, it has been my experience that students often may not know their parts before rehearsal; with technically difficult passages, they tend to practice them right before rehearsal or silently during rehearsal as the teacher works with other sections. This lack of home practicing may be due to several issues. Data from my student interviews suggest that it could be due to the logistics of taking home instruments, the lack of time to practice outside of school because of other commitments, or the idea that students enjoy "flubbing around" to learn their music with their peers. Whatever the reasons, students in this study rarely practiced their parts for this project at home, if at all, and most often practiced and learned their parts at school with their peers.

Group Dynamics

In this section, I discuss the effect that different groups' interpersonal dynamics played in creating their arrangements. I discuss how students formed groups, chose songs, and worked together. I also discuss influences on these group dynamics played by individual students' musicianship levels, student leadership that emerged, contributing group members who were not leaders, and those group members whose voices were not heard.

Group Formation

Friendship played a major role in how groups formed initially. Once groups were established, instrumentation and musicianship level played roles in how the groups worked together. Each group had at least one sub-group of two or three students who were already close friends, and a “loner” who joined because they had no one else to be with. For example, in Kids, Alexis expressed to Whitney that she was “not in a group with anyone” so they signed up together. Justin and Tim wanted to be in a group together and initially got turned down by one group, so Justin wrote their names in the blank spaces beside Whitney and Alexis on the sign up sheet. Tyler chose to sign the sheet with these four because it was one of the few open spots. Other groups formed similarly.

Though gender may have played into groups’ working styles, gender was not the focus of the current study and played only a minor role in how the groups formed and, in turn, how they worked. Rolling was an all-female group; Rikki was an all-male group; and the friend sub-groups who worked together in the other two groups were of the same gender. Similar to Abramo (2008), the boys tended to use musical gestures and nonverbal communication more than they talked; the girls talked and then played or performed. In my study, in both the same- and mixed-gendered groups, boys and girls seemed to prefer these different learning styles. Similar to Abramo, I observed that this created some tension in the Revolution group (Revolution). Similar tensions did not arise, however, in the Kids group, perhaps because they broke off into gender-based sub-groups when needed. Perhaps students tended to be friends with same-gendered students, and therefore friends grouped together. Ultimately, it seemed that friends worked together more effectively than participants who were not prior friends. The exception was Brittney and

Clayton in Revolution, who now considered themselves friends, but had previously dated. At times, this created tension between them and within the group.

Choosing a Song

The groups' song choices were based primarily on some group members' familiarity and preference for a particular song. Minor factors included difficulty and whether or not other groups might choose the song. Previous research on informal music learning (Davis, 2008, 2010; Davis & Blair, 2011; Green, 2008) notes that allowing students to choose songs may provide them with more of a sense of agency than when the teacher chooses music for them. This seemed to be the case in the current study because for the most part, students seemed motivated, working with intensity to create and learn their arrangements of the songs they chose.

Three out of the four groups chose songs that not all group members were extremely familiar with. In the Rolling group, all members expressed that they were familiar with the song put forth by Emily as they listened. In the Rikki group, Jake suggested "Rikki, Don't Lose that Number." Though Scott had heard it before, he was not extremely acquainted with it, but he lobbied for it. Michael, Cody, and David had not heard it before but they agreed to it without argument. This was also the case in the Kids and Revolution groups, where some members lobbied for a song while others agreed because either their initial listen to the song led them to find it favorable, they did not know other songs to contribute, or perhaps they did not want to go against status quo. For example, in Revolution, Clayton and Brittney were the only ones to dialogue about song options. In an interview, Kayla (also in Revolution) said she had thought of songs to bring to the group, but she did not get to because she was absent that day. Her absence is

of note because she was the only member of Revolution who offered opinions throughout the project contrary to primary leaders Clayton and Brittney. Shannon and Chris, who said very little the entire project, did not object to Brittney and Clayton's decision. These two remained relatively disengaged and, ultimately to the group's detriment, were not very successful in learning their parts. Perhaps if they had had more say in the chosen song, they would have been more motivated to learn their parts.

Different than familiarity, group members' like or dislike of the song played a secondary role in their choice. Only in the Rolling group was each member familiar enough with the song to know that everyone liked it. Many group members from the other three groups made snap decisions about whether or not they actually liked the song because those groups chose songs that not all group members were familiar with beforehand. Perhaps had the project allowed for more time for group members to choose a song or if we as the teachers had required all students to bring at least one or two songs, there may have been more convincing agreement about the song choices.

Two other factors played a role in song choice for some groups: originality and difficulty. One person each in the Rikki and Kids groups was concerned with choosing an original song that other groups would not select, which may have influenced other group members to become concerned as well. This did not seem to be a consideration for the Revolution and Rolling groups.

Based on the data I have, perceived difficulty played a role only in the Kids group's initial song choice. Whitney and Alexis commented quickly on songs they thought would be too difficult, and with those comments, Tim, who was choosing the songs they listened to, would usually move on to the next song option. Reflecting on the

project in a final interview, Brittney commented that she thought the song Revolution chose was too difficult and that, in retrospect, it was best for the teacher to choose music, “since the teacher knows what is appropriate and students don’t always know what’s best for them.” She was the only student that expressed this sentiment. Most other students expressed the opposite idea, saying that they enjoyed being able to play music that they chose and music that they listened to outside of school. I discuss this further in Chapter 7, when I talk about students’ enjoyment of the project.

Working Together

Most students in most groups worked together rather well. As noted above, they worked individually, in small sub-groups, and in full group practice sessions to collaborate on creating and learning their parts. After forming groups based largely on friendship and choosing songs based mostly on familiarity with song options, instrumentation, group members’ level of musicianship and group members’ leadership ability appeared to play important roles in groups’ working processes.

Like instruments grouped together playing the same parts in each group. David and Scott chose to learn the same part together on trombone. Alyssa and Haley chose to learn the melody part on flute. Alexis and Tyler both played clarinet and learned the same part. Tim and Justin, both percussionists, played vibraphone and drum set, respectively. The Revolution group struggled the most with learning their parts, perhaps in part because all five members played different instruments.

The students who did not have like instruments in their groups worked with group members who played instruments that were in a similar pitch range or timbre. Tori, who played oboe, chose to learn the melody with Alyssa and Haley (flute). Emily and Rachel

(bass clarinet and bassoon, respectively) learned the same part. Cody, who did not have a fellow trumpet player in his group, learned the melody parts along with Scott and David (trombone). Alexis and Tyler (clarinet) and Whitney (alto saxophone) worked together learning the same part.

Revolution was the most different from the other groups in how they chose parts. The three who were friends—Brittney (French horn), Kayla (clarinet), and Clayton (trumpet)—chose their own parts based on difficulty and their perception of part necessity, making sure they had a strong player on each part. Then they assigned Chris (euphonium) and Shannon (alto saxophone) their parts. Brittney (French horn) and Chris (euphonium) ultimately learned the same parts though they rarely worked together to learn them. Kayla (clarinet) eventually taught Shannon (alto saxophone) the part she was playing. I observed that Chris and Shannon were among the most passive participants among all the groups, seldom seeming to exert much effort in contributing to the group or learning their own parts.

Student Leadership

Students' leadership abilities and level of musicianship were other factors that influenced groups' working processes. Table 5.1 shows how I characterized weak, moderate, and strong musicians as well as how I classified primary and secondary leaders. The style of leadership in each group determined how group members interacted and participated. Nick and I did not officially appoint anyone to be group leaders, nor did we talk about leadership at all; we allowed the groups to organize their work in whatever way they wanted. Students seemed to intuitively look to the people in their group whom they recognized to be the most knowledgeable, the “insiders” (Allsup, 2002, p. 333) or

“on-site transmitters” (Campbell, 1995; Jaffurs, 2004). Social constructivists discuss the notion of a more knowledgeable other or “more capable peers” (Vygotsky, 1978, p. 86). Students’ level of musicianship therefore seemed to play a role in which students became leaders, as well as in how the non-leaders participated in their groups’ progress.

As indicated in Table 5.1, I identified three groups that had at least one primary leader. All of the primary leaders were strong musicians and because of their confidence in their musicianship and their social ranking in the band (whether it was as a leader appointed by the band teacher or as an upperclassman), other group members seemed to look to them to lead the group. The Rikki and Rolling groups each had one primary leader, and the Revolution group had two. All of these primary leaders were upper classmen and Alyssa and Brittney held leadership positions in the band. While Scott and Clayton were not appointed to any leadership positions, they seemed to feel like their musical knowledge would benefit their groups, so they acted as leaders. All four of these primary leaders seemed to be strong and confident in their musicianship

Similarly, studies of garage rock bands (Green, 2001; Campbell, 1995) and informal learning in the school (Green, 2008) noted that the group leaders were often the ones who were strong musicians in their groups. The appointed leaders in a large ensemble may be similar to leaders in garage rock bands in that they are usually the more knowledgeable group members. The parallels of social hierarchies and musicianship within the concert band seemed to transfer to the informal learning practices of the student-led small groups. Because Nick, like many high school large ensemble teachers, had an established hierarchy of leaders that included a drum major, section leaders, and

band officers, it seems that this filtered into these informal learning settings: the students who were already leaders continued to be perceived as leaders by their peers.

Student leadership also emerged among students who did not seem to identify as leaders prior to the project. When the primary leaders were either absent or not performing their leadership roles as the group needed, “secondary leaders” (my term) stepped up and helped lead their groups, and they had a noteworthy impact on their groups’ direction, work ethic, and success in the long run. For example, in the Rikki group, Cody, who did not seem to think of himself as a strong leader or a strong musician, took over as the group’s leader when Scott was absent. It seemed to me that Cody had a stronger knowledge of music theory than the others in his group because he used musical terminology, but his playing level was quite weak and he had low self-confidence about his playing. However, because Scott was absent, Cody took on the role of secondary leader as he led the group’s conversations and decisions in creating their arrangements.

In the Kids group, which I characterized as not having a primary leader, I identified Whitney and Tim as secondary leaders because, especially in the beginning, neither of them seemed to want to take charge of their groups, neither seemed to exude the characteristics of the leaders in the other groups, and no other members of the Kids group seemed to expect that Whitney or Tim would be the leaders. However, because no one else in the group seemed to want to be the leader, both Whitney and Tim took over and, in less overt ways than the other three groups’ leaders, helped their groups progress in creating their arrangements. In the Rolling group, though Rachel seemed to be a

stronger musician, she did not think of herself as a leader but she took charge when Alyssa was absent.

Based on findings from the interviews, opportunities to fulfill a leadership role seemed of great value to the secondary leaders, as they were focused, diligent, and determined to help their groups be successful (see Chapter 7). Green (2008) indicated hidden musicality and hidden leadership qualities of some students in her study. She stated that those qualities came out as the project progressed and that their teachers did not know students possessed these qualities before the project. The emergence of secondary leaders within my study supports Green's findings about the emergence of hidden musicality and leadership qualities in some of the students in her study. However, the dynamic of primary and secondary leaders seems to be somewhat different from previous research of garage rock bands, which only discussed the notion of one group leader.

Contributing Group Members

Research on peer and group learning (Bennett & Dunne, 1992; Bielaczyc & Collins, 2000; Boardman, 2002) and collaborative learning (Goldberg, 1990; Hoffman, 1991; Keil, 1987; Luce, 2001) discusses the importance of working in social settings with peers in contextual musical learning experiences. Most students in the current study, whom I did not identify as leaders, felt comfortable to exchange ideas with the primary leaders much like students in the garage bands and popular musicians did (Campbell, 1995; Davis, 2005; Jaffurs, 2004). In the Rolling and Revolution groups, the strong and medium-level musicians seemed to feel free to “noodle around” and talk as needed. Specifically, in the Kids group, with no real dynamic primary leader, every group

member seemed to feel comfortable to noodle, perhaps because they had no clearly defined person they looked to as a leader, or perhaps because everyone in their group may have been at the same level of musicianship. The current study supports the findings of others that collaboration within small student-led groups helps students successfully complete a project and attain their goals (Campbell, 1995; Davis, 2005; Hasty, 2009; Jaffurs, 2004).

Voices Not Heard

Previous researchers have examined student input in the classroom, and have determined that it is important that all students' voices be heard and that all students participate (Abramo, 2008, 2011; Allsup, 2002, 2003). In terms of group set-up and type of students participating, the current study is similar to that of Allsup (2002, 2003), who conducted a study of high school band students working in small peer-led groups after school; however, although all but two students in his study had learned band instruments, some chose to play rock band instruments for the study. Allsup was particularly interested in creating a democratic environment, stating, "Each participant in [his] study acknowledged the benefits" of "cooperative or peer learning" (p. 33). However, he also discussed problems that occurred in one group due to students having different expectations and abilities: "In spite of a democratic environment, inequalities in experience were a challenge for the growth of [the jam band] ensemble" (2003, p. 31); the situation within a small group can become problematic "when the more experienced players do not feel that the newer collaborators are contributing equally" (2002, p. 334).

Abramo (2008, 2011) discussed a similar concern with everyone's voices being heard: when Nicole became the leader of her mixed-gender group, "her opinions and

directions on how the music should evolve often were ignored, and her musical participation became limited” (2011, p. 33). Abramo noted that she became frustrated and stopped coming to the group as often. This had to do with a difference in the ways that the boys and the girls wanted to work: the girls wanted to talk about things much more than the boys, who preferred musical gestures. Abramo concluded that “rather than their miscommunication being a result of differences in individual personalities, the boys’ inability or unwillingness to communicate with Nicole might have been a result of their incapability to understand her musical process” (p. 35).

Like Allsup’s and Abramo’s participants, students in my study were also not always able to have their voices heard within their small groups. I classified the students whose voices seemed to go unheard as weak musicians because either it seemed that they were not confident in their musicianship or because I rarely, if ever, heard them play their instruments or discuss musical content. Some students’ voices went unheard even though they tried to communicate their thoughts. An example of this is when, although Haley in Rolling tried to communicate her thoughts about working on dynamics and articulations, the group never actually worked on that so she then stopped trying to give suggestions. Still, other students did not attempt to contribute much, if anything. For example, in Revolution, when Brittney and Clayton lost patience with Shannon and Chris, they seemed to become less involved, and Shannon displayed even less initiative.

Though most students in the current study seemed at ease to give input in the ways they felt comfortable doing, the seemingly weaker or less confident musicians did not. Their voices appeared to go unnoticed throughout a lot of the project. Allsup spoke of group dynamics in terms of democracy, reiterating Maxine Greene’s (2001) assertion

that “the conditions of democracy provide a groundwork for unheard voices, leading potentially to self-actualization” (Allsup, 2002, p. 336). In this study, I interviewed four participants (Shannon, Haley, Tyler, and Cody) individually to offer them more of a voice because they were either silent in the group interviews or because I did not feel that they were saying everything they wanted to say. They seemed to be loners within the band, because they were among those who were added to small groups after friends grouped together and because during session rehearsals, they were mostly quiet. Therefore, these participants may have started out as outsiders to friendship groups that were already intact. Another reason they did not offer much during the project may have been that they did not feel confident in their musical abilities, or they did not feel comfortable enough to admit that they were nervous about their perceived lack of competence or overall lack of self-confidence. Cody was the exception to this because eventually he did take on more of a secondary leadership role in his group. Perhaps some of the quieter students might have contributed more had Nick and I not required the groups to all include 5 students, for logistical reasons. Perhaps these students might have chosen group members with which they felt more comfortable.

Chapter 6 Playing by Ear

Through the process of learning music aurally to create their arrangements, students engaged in learning music in many different ways, and they spoke about these different aspects in interviews. In this chapter, I discuss the musical elements students addressed as they created and learned to perform their arrangements by listening to recordings. These elements include pitch, division of parts, form, key and modality, intonation, instrumentation, and other musical elements that they addressed less. Next I discuss emergent themes that arose out of their aural learning processes. These themes include prior experience, noodling around, and purposive listening.

Musical Elements

Pitch

Pitch was the first and fundamental issue that all groups struggled with, both as they were choosing parts and after they had settled on parts. When working with others in their group to learn parts, group members employed two approaches: discussing letter names and matching pitch. Saying letter names worked relatively well when students did not have to transpose, as when similarly pitched instruments played the same parts. When pitch names created problems for students who played differently pitched instruments, matching pitch worked better. Different timbres and ranges threw some students off as well. For example, when Cody (trumpet) tried to match pitch with Scott (trombone), both had a difficult time hearing when they had locked in to the same pitch.

In this project, I chose to “drop them in the deep end” to see what they could figure out on their own. As I reviewed the first rehearsal recordings, however, I learned that students did not know how to dialogue about notes on differently pitched

instruments. At the beginning of Session 3, I gave all participants transposition charts without providing specific modeling or coaching. However, only Rachel (bassoon) utilized the chart to help Emily (bass clarinet) identify the note names that matched her note names, as they worked to learn the same part. Though I provided some scaffolding by giving students with transposition charts, had I gone into more depth of explaining how they worked by teaching and reviewing the concept with the students, perhaps their use of the charts may have been different.

Division of Parts

Each group took a different approach to deciding how to divide their parts. All groups struggled in the beginning, concerned with proper instrumentation, i.e., high instruments playing the melody, mid-range instruments playing countermelodies or harmonies, and low instruments playing the bass line. The Rolling group assigned clear parts from the beginning. The Kids group had loosely chosen parts by the end of Session 2 and only made small changes after that session. The Revolution group initially discussed rotating parts so that everyone could play multiple parts, but when that proved too challenging for them, they decided during Session 4 that they would each play one line throughout. The Rikki group took until Session 6 to decide how to split up their parts, simultaneously also changing the form as they decided who would play what and whether they would include improvised solo sections.

Because all the recordings included a rhythm section or instrument, the two groups with someone playing drum set may have had an advantage in aurally copying the instrumentation of their songs over those who did not. Regardless, the groups without someone playing drum set were still able to create and perform their arrangements,

including rhythm parts, with relative success. Most of the bass players and others who did not usually play a melody part expressed interest in playing more than a simple accompaniment pattern. However, they found it difficult and none played melody parts in the end, with the exception of Michael's improvised solo on baritone sax.

Form

Every group discussed form to some degree, and some were concerned with it much more than others. Group members rarely used the word "form," unless prompted by my questions on the reflection sheets. Scott talked about the "road map." Whitney said, "I'm just gonna label this A and this B" (See Figure 5.1). Other students would say things like, "and then this happens and then that happens." They used terminology describing popular music, such as "verse," "chorus," "transition section," "solo section," "that section," "that part," "intro," "beginning," "ending," and "outro." Nick, Lauren, and I did not teach or use these terms as part of the project. Perhaps students used this terminology because they were used to hearing these words in relation to the popular music they were working on, or perhaps they did not know what else to say. Frequently, they sang or played a section or a few notes of the music to show everyone in the group what they were talking about rather than labeling it.

Groups decided on the form they would use in performance largely based on how many sections they had learned by Session 5, which was the session before the practice performance the following week. The Rolling group decided they did not have time to learn the bridge, so they had several conversations to decide how many verses and choruses to play, coming up with a combination that they all agreed upon for performance. Kids learned "the first two minutes and forty-two seconds" of their song, as

Whitney pointed out, ending before the bridge. The Revolution group agreed to play two verses and the “Alright” section. The Rikki group learned the intro, verses, chorus, and decided to include improvisation in their arrangement. All groups used most of Session 6 to figure out how to end their songs.

Key and Modality

Prior to this project, students were accustomed to identifying key signatures on the page in large ensemble rehearsals. During this study, students also attempted to identify the key early in the project, much like Nick does in band rehearsal. However, because they were trying to do it aurally, it proved to be a more difficult task, and consequently three groups did not ever fully label their song’s key. The Revolution group attempted to identify the key during Sessions 2 and 4 but based on their varied instrumentation (Clayton on trumpet, Brittney on French horn, Kayla on clarinet, Shannon on alto saxophone, and Chris on euphonium) their ideas were wildly different and they did not ever fully determine it. In the Kids group, Tyler and Whitney mentioned that they should “figure out the key signature,” but they never did. In the Rikki group, Scott (trombone) led a lengthy discussion of key, deciding it was in E. Though it was somewhat helpful for David (trombone), Cody (trumpet) did not understand how to transpose the notes. The Rolling group did not discuss key until the final session when they were trying to build their final tonic chord. Transposing instruments may have influenced students’ ability to discuss key and mode; however, it is important to note that they were still able to play in the correct keys for the most part, even without being able to label them.

Intonation

Though not a major topic of discussion or action for any group, three groups briefly attempted to tune their instruments during the project. Group members in each group tuned to a tuner but none of them all tuned together. This seemed to be more of a replication of what occurred in large ensemble rehearsals; intonation adjustments were never made when they were performing their arrangements. Also, no group tuned during every session. The Rikki group members tuned individually to a tuner at the beginning of Sessions 2 and 3. Before their practice performance and in Session 6, members of the Kids group similarly tuned individually to the tuner but not to each other. However, in group interviews after the final performance, the Kids group members' comments centered on the fact that they were out of tune. The Rolling group did not tune until Session 6 when Alyssa noticed that people were out of tune as she worked on building the final chord. Then they all tuned individually to a tuner but not as a group. The Revolution group did not tune nor did they discuss intonation during the project. Perhaps the lack of attention to tuning was because they could not hear that they were out of tune, or because they were not aware of the importance of tuning with each other. Or maybe they were preoccupied with learning their parts and pitches. Nick said when he tuned students in large ensemble rehearsals, he sometimes used tuners and other times had students listen to each other in sections. Ironically, Nick commented that he thought the large ensemble intonation was improving as students progressed through the project.

Instrumentation

Based on some participants' comments in sessions, it is likely that if I had allowed it, some participants would have utilized non-band instruments. Emily, Rachel,

Kayla, and Cody commented on how difficult it was to play a part on their band instrument that was written for a different type of instrument. These four students learned parts for multi-voiced instruments (guitar and piano) and had a difficult time figuring out how to adapt them to their instruments. Scott mentioned that he wished he could play piano instead of trombone. He also complained that the verses were “just the same notes so it sounds kind of dumb on an instrument. Like it doesn't work without lyrics.” I offered the option to sing but he refused it.

The two groups with percussionists experimented with and discussed different instruments the most. In Rikki, Michael, Cody, and Scott all gave suggestions to Jake (percussion) for instrumentation in addition to the drum set he was originally playing. In the Kids group, Justin and Tim decided to play drum set and vibraphone, respectively. Later in the project, they discussed the possibility of adding auxiliary instruments such as hi-hat, violin, or chimes, though they did not include these instruments in rehearsals or the final performance.

Other Musical Elements

A few participants discussed other musical elements as they created their arrangements. Dynamics arose as a concern as they worked on balancing their arrangements. The Rolling, Revolution, and Rikki groups peripherally mentioned adding dynamic variation into their parts for contrast within their arrangements. It seemed that they attempted to include them in their final performances by attempting to allow the melodies to be heard, while playing the harmonies and percussion parts a bit softer.

The musical element of improvisation was discussed only by members of the Rikki group. During the last two sessions they decided that Scott and Michael would each

“improv for 8 bars.” Range came up briefly for a couple of individual students when they realized that they could not play their instruments either as high or low as the instrument for which their parts were actually written. When a part was out of range, participants had to problem solve how they would make that instrument’s part work for their instrument. For example, Cody adapted a piano motive that spanned over three octaves to play on his trumpet, though the notes he chose to play did not entirely match the original.

Each group took their recording’s tempo during most rehearsals and for their final performance, though the Rolling, Revolution, and Kids group briefly discussed changing tempos. The rhythms participants played mimicked the exact rhythms played in the recordings but rhythms were also rarely discussed. It seems logical to me that, because they were learning the songs by ear, they may not have thought to discuss changing the song’s tempo or rhythms, maintaining the tempo that their recordings dictated.

Emergent Themes

Prior Experience

Allowing students to bring their prior knowledge to the classroom and build upon it is a major tenet of constructivism (Dewey, 1938; Duffy & Cunningham, 1996; Rousseau, 1955; Wiggins, 2009). At the beginning of the project, four students said they had previously attempted to learn some songs by ear. During the project, all of these students were able to successfully audiate the pitches they heard and play them correctly much faster than the students who said they had not previously attempted to play by ear. This latter group had more difficulty figuring out what parts they would play and took longer to learn them than those with previous experience playing by ear. These findings

are in line with the constructivist tenet of building upon students' prior knowledge in the classroom.

As the project progressed, most students in the study, regardless of their prior experience playing by ear, were able audiate pitches and play by ear. They also acknowledged that they felt they had progressed at this skill. These findings support prior research that found that frequency of playing by ear may help improve students' aural skills (McPherson, 1993, 1995). Perhaps the more students play by ear, the better they become at doing it, which adds to their overall musicianship.

Noodling Around

Previous research in informal music learning suggests educational value in “noodling around” or “messaging around” (Green, 2001, 2008; Campbell, 1995; Davis, 2005, 2008, 2011; Jaffurs, 2004). This idea lies within the constructivist principles of students constructing their own knowledge and moving toward the goal of functioning independently from the teacher (Boardman, 2002; Brooks & Brooks, 1993; Wiggins, 2009). It is similar to Blair's (2009) “thinking and doing,” where “students own the doing and thinking—the informing of self musically—they are enabled to further their own musical understanding” (p. 44). In my study, students had to solve musical problems on their own or in a group. As Blair noted, allowing students to think through and come to the answers themselves, with the help of peer or teacher scaffolding, may help them become “creative, imaginative, and independent musicians who are responsible for thinking and doing and musical decision making within a teacher-supported learning environment” (p. 45).

In a discussion of creating independent learners, Duke (2012) similarly suggested there is educational value in the “muddle” of finding pitches. When referring to a particular student’s frustration not being able to figure out a note on his own and the teacher not helping him, Duke stated, “his moments in the muddle led him to arriving at an advantageous solution,” (p. 40) and the student “discovered that *he could figure it out*” (p. 40, emphasis his). Though Duke was writing from a neurobiological perspective of how the brain forms memories, his point about how the brain works during “muddling around” is similar to what happened for students in my study. The teacher or I could have told them the notes and alleviated their frustration, but because they eventually arrived at the answer themselves, they learned that they could figure it out. This finding in the current study supports Duke’s assertion that students need time to muddle around and figure things out on their own. Though he does not write from a constructivist standpoint, his point about helping learners think more independently fits with constructivist learning theories and further supports my findings that student-led small group and individual learning help students construct deeper understandings of knowledge.

Purposive Listening

Seven participants spoke specifically of, as Michael said, “listening to parts I have not heard before” in the recording. Others talked about listening in the recordings specifically for parts that were difficult to hear. They said things like, “hearing hidden parts,” “there’s a bazillion layers,” and “that part was really hard to hear.” Green’s (2001, 2008) term, “purposive listening,” seems to describe what students in my study were doing: listening more purposively beyond the surface of the music, whether it was listening to their recordings or to their peers.

Most participants in this study expressed in interviews that they listened to their project songs outside of class with purpose, rather than passively, as they had usually listened before the project. Green (2001) reported that her participants said similar things about purposive listening, adding that “if they had remained as passive listeners only, rather than engaging in informal music learning practices as music-makers involving purposive listening, then their listening would have been less incisive, and their attention to quality and detail more restricted” (p. 73). In Green’s study (2008), part of her purpose was to see if the project would “change the way students listen to, understand, and appreciate music in and beyond the classroom” (p. 2). She found that “not only had [a number of pupils’] listening skills been enhanced within the classroom, but this had spilled over into their leisure time,” such as “hearing things in the background”; “hearing more of the accompaniment”; “manipulating the balance of sound [through headphones]”; holding “lines aurally in their ‘mind’s ear’” (pp. 77-78). Students in my study reported developing similar listening skills.

Davis (2005) noted that, based on her research and others’ prior research, rock musicians who learn music aurally had developed keen listening skills and listened better to each other in full group rehearsals as they played. This type of critical listening required a “disciplined and sensitive ear and repeated listening opportunities” (p. 17). One participant in her study of the musical processes of a three-member rock band mentioned that the group members “just feed off each other and listen a lot” while another added that they had to “follow each other” so that there is not “a big mess” (p. 12). Once students in the current study developed a need to listen across their small groups, they listened to each other in a manner similar to what Davis (2005) described.

As a band teacher, I often asked my students to listen across the group to balance and blend, to listen for others who are playing their part, or to who has the most important part in a certain section; Nick said he does the same. But unlike musicians who learn music primarily by ear, the formally educated students in the current study were not transferring the concept of listening to their small groups, though they had been taught the importance of it in large ensemble rehearsals. Instead, the issue of balance came up as students saw the need to address it, usually toward the end of the project. Even though the teacher may have “taught” students to listen in the large group, did they actually “learn” it? Once they started playing together in small groups and became more familiar with their songs, they recognized the need to balance the musical lines so that the most important parts were heard most clearly.

One tenet of constructivist learning theory, based on the work of both Dewey and Piaget, is that “the construction of knowledge is an *active* process” that can be described “in terms of individual cognition” (Phillips, 1995, p. 9). In my study, with fewer students in a group, fewer students on a part, and students not simply reacting to a teacher dictating what to do, the students in these student-led small groups were held more accountable for their own learning. They seemed to be more active in constructing their own understandings of what it meant to actively listen to others as they were making music.

In summary, students in the current study seemed to listen purposively in two ways: purposively listening to a recording, and listening purposively within and across a small ensemble. They listened in these ways both while playing and without playing. These ways of listening can be considered purposive because the students were listening

deeply to their own and other parts with the express purpose of hearing something in particular.

This endeavor of actively listening may have increased their musicianship, musicality, and the skill of purposive listening. Their need to know led to experimenting to figure out how to apply the concept of balancing their sound. This is supported by findings that students construct knowledge by working collaboratively to solve problems with minimal teacher guidance, in research on student-centered learning in general education (Bennett & Dunne, 1992; Bielaczyc & Collins, 2000; K. Brown, 2003; Nanney, 2004) and in music education (Blair, 2009; J. Brown, 2008; Scruggs, 2009; Webb, 2012) and on collaborative learning in music (Goldberg, 1990; Hoffman, 1991; Luce, 2001).

Chapter 7 Students' Attitudes and Perceived Benefits

In interviews, students spoke about their attitudes toward the project and the benefits they thought they gained from doing the project. In this chapter, I discuss both of these aspects from the students' perspectives. Their attitudes are grouped into two categories: enjoyment and non-enjoyment. Perceived benefits include skill-building, confidence, and non-challenges.

Attitudes

When students were asked about their attitudes toward the project, they talked mostly about aspects they enjoyed. These aspects include the student-led learning process, the aural learning process, social aspects of the project, and motivation to engage with music. The facets of the project that they did not enjoy were minimal, and included things they disliked and frustrations they expressed.

Enjoyment

Evidence of enjoyment of the learning process prevailed throughout the project. I observed students exhibiting emotions, actions, and work habits that indicated that they enjoyed this project. They discussed in interviews different aspects of the learning process itself, stating that they appreciated the student-led aspect and the aural aspect. They also enjoyed the social aspect of working with and making new friends and reported that they developed motivation to engage with music outside of the classroom.

The student-led learning process. Participants enjoyed the autonomy of song choice and the creative freedom the project afforded them. Students described enjoyable parts of the project using phrases such as “our own spin on it” (Whitney), “adding extra parts” (Michael), and “something creative that we haven’t done in band before”

(Clayton). Tyler liked that the project was “very open-ended. It doesn't have to be one set way. You can learn it many different ways if you need to.”

All of the groups spoke of enjoying small group collaboration. At least one person mentioned this in every group interview. It also showed in their rehearsal sessions. Tim from Kids described their group collaboration:

Even if we're all not working together and even if we're not practicing together, we come back and work together. You can tell that we've all put our ideas into it because I start off with something and Justin shows me something and we all change to it and we figure other stuff out. So whatever we had in mind usually doesn't end up what's happening. We all put everything that we had onto it, so it sounds like [the recording] but it still doesn't sound exactly the same. It sounds really good.

Working in small groups without a conductor, where they had to lead and work out their own problems, these students felt that they had much more responsibility than in large ensemble. They worked out issues and disagreements on their own, with minimal to no arguing. Justin spoke about the benefits of each student-led group being able to go at their own pace: “We actually can, like, focus and isolate little parts, and we don't have to just speed through everything and try but not actually learn anything. With this we get to go at our own pace, and it's actually really beneficial that way.”

Members of all groups commented on the novelty of doing something different in band. Though they said they “enjoy playing music we play every day” (Justin) in full band class, many group members said this project was “a nice break from just sight-reading and learning music traditionally all the time” (Clayton). Alexis appreciated that this was “different than normal band,” and Whitney said, “I like it because I like being able to play a song that people know and that I know. It's not some weird music that you've never heard before in your life. It's something that you'll hear on the radio

sometimes.” They mentioned that doing the same thing every day in “normal band” could be “tedious” and “repetitive.” Justin said, “I enjoy this. . . . This is a cool change of pace, so I like having something different to do. It makes coming to school a little bit more interesting.” Jake said, “I think it’s a nice deviation from the normal band and it’s not something you do very often.” Scott agreed. Alyssa said, “I like it You have to think about it in a different way and I think that’s why it’s a little bit more difficult because we’re not used to thinking of it in that way.”

In interviews, several students, who initially were nervous about being able to complete the task, said they felt good when they experienced success on their own or within their small group. Alexis said, “You have to figure it out yourself. I think that’s the most challenging part, but it’s fun.” Whitney went on to say, “It’s so hard that when you get a part down, it’s cool, cuz you’re like, I finally figured this out. What’s next?” Alexis summarized by saying, “You feel accomplished.” Cody in Rikki initially felt nervous and not excited about this project, but his attitude changed once he started realizing he could actually do it: “Once we got our parts down and we were playing it together, I was like, hey, this project is actually fun cuz I can actually do this!” The members of every group showed excitement when things began to come together. When a run through of the song first became recognizable, many participants outwardly expressed excitement saying things like, “Woohoo!,” “Alright!,” “We got it!,” and laughing or smiling, pleased that they *could* figure it out on their own (Duke, 2012).

Giving students time to work on their own allowed them to find problems and discover solutions at their own pace to create their own understandings. To create a context for musical learning in a constructivist classroom, Wiggins (2009) suggested that

teachers create environments and projects that allow students to identify problems and solve them rather than having students reacting to a teacher's instructions. By allowing students to take control of their own learning and construct their own understandings, students in my study were able to, as Justin said, "actually learn something and not just speed through it." This indicates that they were able to more solidly internalize what they were learning and construct their own understandings.

Study participants enjoyed making musical decisions autonomously and independent of teacher input. They got to choose the parts they wanted to play to create something that made musical sense to them. The absence of sheet music allowed for more than one "right" answer when creating their own parts – they got to choose how they wanted their parts to sound, how difficult they wanted to make them, how to begin and end, what layers of the song they were going to use, and what the form the song would be. This supports Blair's (2009) findings that one goal in a student-centered learning environment should be for students to be creative by writing their own parts. My findings also support research suggesting that, when students work autonomously and make their own decisions, they seem to gain enjoyment from it (Davis, 2008, 2010; Green 2001, 2008). The fact that students in my study spoke about the open-endedness and creative license the project afforded leads me to believe that they would like more opportunities to do projects that require thinking in this way. Nick, their teacher, is to be commended for being willing to let his students experiment with this project.

Aural learning. Members from each group expressed enjoyment of aurally learning music. Tyler said, "It's interesting working with just a song instead of a piece of [sheet] music." David said, "I've never done that before so I thought it was going to be

fun trying to figure out how to play with a song by just listening to it.” Brittney spoke of the flexibility that being able to aurally learn a song affords her as a musician: “It's always just fun to like figure out, how to play the Harry Potter song (for example).” Kayla said, “It’s expanding my knowledge of learning music by ear.” In her research on informal learning, Green (2001) indicated that the popular musicians in her study valued various aspects of informal music making, particularly playing for enjoyment. Green’s (2008) participants reported that the entire learning process was enjoyable when they worked together, though she did not specifically discuss enjoyment of playing by ear.

Brittney and Alyssa, among the strongest formally educated musicians in the current study (see Table 5.1), were originally least excited about the project. Alyssa initially said she did not think aurally learning music was a viable way to learn, because “you won’t necessarily understand the theory behind it.” She changed her mind as the project went on, saying at the end that she was able to “make more connections” within the music. Brittney’s attitude in the beginning sessions led me to believe that she was not excited about the project. I am not sure if she changed her mind at the end or not.

Kayla and Michael (moderate musicians, Table 5.1) and Scott (strong musician) said they already learn music by ear but were excited to be able to improve upon this skill at school. Michael said, “I started hearing stuff that I didn't before, so it gives me a good ear after doing this.” The other participants, however, had rarely if ever attempted to aurally learn music. It seemed that the moderate and weak musicians were more open to doing the project at first. The exception was Kids group members, Justin, Whitney, Alexis, and Tyler (all moderate musicians). During Session 1, they made sarcastic remarks about the project, and seemed to be skeptical that they would be able to complete

the task I had set forth. Tim in Kids did not specifically make any remarks regarding whether he was nervous or not about doing the project. I do not have recordings from Session 1 for Rolling and Revolution, and I only have a partial transcript from Rikki, so I do not know if students in other groups initially made similar remarks. However, their reflection form comments from Session 1 suggest nervousness about the project more than negative attitudes.

Social aspect of the project. Several group members talked about their enjoyment of the social aspect of working together in small groups. They enjoyed getting to know people better, making more friends, and playing with their friends in a different way. Tori said, “Like, earlier, we were friends and we knew each other but now I feel like I can talk to [Alyssa, Rachel, Haley, and Emily].” She also commented, “I thought it was gonna be hard, but when you're in a group and you can talk with other people, it's way easier.” Regarding the project and the Rikki group members’ participation, Cody said, “We’re gonna be like buddies after this,” and Scott added, “We connect more” during small group rehearsals. Cody mentioned that he improved at communication: “Figuring out what to do shows the amount of communication everyone [has to do] in the project.”

After groups ran through a portion of their song, laughter often ensued. A lot of the laughing occurred when students played something that sounded out of the ordinary from the part that they were supposed to be playing, like when they would skip a section and play the wrong part. Much laughing and talking also occurred as students worked out performance logistics in their final run-throughs. Acting as an announcer for their group seemed to be outside some students’ comfort zones. The laughing and talking was

perhaps a means to create a comfortable environment so that they could work through less comfortable or familiar tasks.

Research on constructivism (Duffy & Cunningham, 1996), student-centered learning (Hoffman, 1991; Webb, 2012), and informal learning (Davis, 2005; Green, 2001; 2006, 2008) supports the premise that not only do students learn from their peers, but that they enjoy working with peers, and that this in and of itself is beneficial for learning. Davis noted that participants in her study of a rock band “enjoyed being together” (p. 10) as they worked to compose their songs, and that this enjoyment motivated them “to continue to learn and perform” (p. 27). Green (2006) stated that the teachers in her study were surprised that their students’ “group cooperation was better than usual” and that “motivation and enjoyment were significantly higher than normal” (p. 110). My study echoes these findings that the enjoyment that comes with working with peers is motivating and beneficial to learning.

Motivation to engage with music. Four students’ enjoyment of the project seemed to motivate them to practice their instruments individually outside of class for the project, though none said this was a major method for learning their parts. These four students played smaller instruments and were able to easily take their instruments at home. It seems that even when other students said they were motivated to practice outside of class, those with larger instruments did not actually do so, due to transportation issues with a larger instrument and taking the bus or public transportation.

Students in this study also engaged with music outside of the classroom by listening more purposively to recordings, both of the songs they were using to create their arrangements and of other songs. Most students indicated in interviews that they listened

to the song a great deal at home, both purposively and distractedly, to familiarize themselves with their parts and how the parts fit together. Though they did not describe listening as “practicing,” it seems to me that this listening perhaps helped them learn the song more easily on their instrument. In addition they were, perhaps unknowingly, building a new skill of actively listening.

Students in this study commented that they enjoyed being in charge of their own learning. By being active participants in solving musical problems to create their arrangements, they could go at their own pace, choose music they liked, and work with their friends. Based on my observations of the groups’ interactions and learning methods during sessions and their answers to questions in interviews, this enjoyment contributed to some students’ motivation to engage more with music outside of class, whether it was by listening to music more actively or practicing their instruments. These findings are most similar to research in aural learning (Woody, 2012; Woody & Lehmann, 2010) that examined how small group learning affected students’ desire to be “lifelong music participants” (Woody, 2012, p. 87). My findings support others’ that students’ motivation increases when they have autonomy in musical process and in song selection (Allsup, 2002, 2003; Davis, 2008; Green, 2001; Westerlund, 2006).

Students stated in interviews that they enjoyed and were motivated by full band experiences. However, they also reported that they enjoyed doing an activity that “is different from normal band.” Although they enjoy playing large ensemble literature, several students felt that “doing something different makes it less tedious,” suggesting they want to continue to interact with music in more ways than just via playing in a large ensemble. My findings support others’ findings that students in traditional large

ensembles may enjoy and be motivated by variety in their school music experience (Allsup & Benedict, 2008; Allsup, 2002, 2003; Davis, 2008).

Non-enjoyment

Students in this study discussed in interviews some aspects that they did not enjoy about the project. In addition, they both reported in interviews and indicated during sessions their frustrations with some aspects of the project. In Chapter 8, I will suggest ways teachers could address these dislikes when attempting a similar project.

Dislike. Negative attitudes were minimal throughout the project. Haley (Rolling) expressed that she got bored with the project, reporting that she learned her part quickly and did not learn anything new after that. Kayla (Revolution) did not like being required to perform in a small group; she preferred full group performances because, with more people on a part, she felt less pressure to perform her part completely accurately. She may have felt enhanced pressure due to the frequent absences of the leaders in her group, the disagreement between group members, or the weaker musicians not being able to learn their parts.

By the end of the project, some students expressed their dislike of the song that they chose to play. Shannon (in Revolution) told me in an individual interview, “My mom got an earful at the beginning of the project because I didn't want to do the Beatles and I hate the Beatles song and why do I have to do this?” Cody (in Rikki) said in the last interview that he would “definitely [choose] a different song, cuz I'm sorry Scott, I really didn't like ‘Rikki Don't Lose that Number.’ Next time we should do Coldplay.” Both Shannon and Cody were among the students who did not initially give input for the song choices in their groups, and they were least satisfied with it at the end of the project. Jake

(in Rikki), who has partial hearing loss and wears a hearing aid, found aural learning difficult and said he did not enjoy doing it in this project.

Frustration. Instrumentation problems frustrated at least one student in each group. Rachel, Tim, Cody, and Kayla talked about the difficulties of trying to arrange a part from a polyphonic instrument (piano or guitar) to a monophonic instrument, or a vocal line into an instrumental line. Rachel talked about the difficulty she had combining multiple parts (drums and bass line) into a part that she could play on bassoon. Tim mentioned that he was challenged by “playing vibes and playing a part that wasn’t intended for it.” Cody “tried to come up with the same notes [for the guitar part on his trumpet] and if I really can’t figure it out then I’ll just try to figure out something that will work.”

Individuals also showed frustration with group members who did not learn their parts. Brittney and Clayton (Revolution) became exasperated at Shannon’s and Chris’s slow progress learning their parts, which they interpreted not as difficulty learning but as lack of effort. Alexis and Whitney (Kids) got annoyed with themselves not being able to figure out their own parts more quickly. Scott (Rikki) became frustrated with not being able to play his own part accurately, and eventually Cody also became irritated with Scott.

Group members sometimes became frustrated because they had different opinions of what needed to be done. In Rikki, when Scott returned after a missed rehearsal, he tried to take the group on a different course than their previous week’s work, which slowed their progress, creating frustration for Cody and Michael. Similarly, in the Revolution group, Brittney, Kayla, and Clayton were at odds much of the last few

sessions because they wanted to work on different things, their strategies conflicted, and there was a power struggle for who would be the group leader.

Absence was an issue in every group, though some groups showed their frustration with it more than others. In each group, two members—often primary group leaders—were absent at least once during the project, which frustrated other group members. In Revolution, Kayla (secondary leader) showed great annoyance and frustration with Brittney's and Clayton's (primary leaders) absence for a portion of Session 4 and for the practice performance, but she did not express it when they returned. Likewise, when Alyssa (primary leader) was absent twice from the Rolling group, Rachel (secondary leader) was visibly irritated but did not show it when Alyssa returned. These two groups had members who relied on the group leaders to tell them what to play and help them learn their parts. When the primary leaders were not there, both Rachel and Kayla stepped up to help their groups move forward. However, they did not always seem to know how to help their groups as effectively, which led to these two secondary leaders getting frustrated with leaders not being there to help the group progress as quickly. In contrast, when Scott and David were absent from Rikki, and when Whitney and Alexis were absent from Kids, group members did not express frustration that they were gone. Perhaps this lack of frustration was because most of the group members in these groups took initiative to learn their own parts, so when the group leaders were away, they were still able to get something done without having to rely so heavily on their leaders to make progress.

Other studies found that not all students enjoyed all aspects of projects such as these. Davis and Blair (2011) discussed the frustration students in the college classroom felt when doing a similar informal learning project:

There were obvious moments of frustration, posturing, negotiation of roles, ego, heightened insecurity and self-consciousness over not wanting to appear “incompetent” (Rogoff, 1990) due to a lack of proficiency – in a way that is apparent to both self and others – in a setting (musical) where one is typically competent. (p. 130)

Though Davis and Blair did not specify what caused these frustrations, they imply that such concerns led to students’ frustration. Though students in my study did not articulate such concerns in interviews, their comments during the first few sessions of the project lead me to believe that they were probably feeling insecure and a bit incompetent.

My findings that a few students did not like the song choices in their groups are not echoed in prior studies. However, research on informal learning in schools (Davis & Blair, 2011; Green, 2001) discusses the importance of students having choice in the songs they will work with. Davis and Blair (2011) noted that students had some difficulty in learning their song, “which in retrospect [Davis] attributed in part to the fact that [she] was the one who chose the music. . . . [The song] was not as familiar to my students as it was to me. They did not have a compelling sense of agency about completing the cover” (p. 129). Though by the end of the project some students in the current study may not have liked the song they chose, the fact that they had the opportunity to choose it seemed to give them some sense of agency to work on it and create their own arrangement.

Hasty (2009) also discussed her students’ frustration in an urban high school general music class with not being able to play instruments adequately enough to be successful at creating and performing arrangements in a similar project. Though they

were initially motivated and excited to do certain aspects of the project, she reported that they later became frustrated with their lack of ability to learn the instruments and concluded that the project was too difficult because they “had not received adequate school music training to undertake such an enormous endeavor” (p. 80). Students’ experiences in my study are similar to students in Hasty’s study in that some were initially excited to do the project. However, my findings are different because, as Hasty indicated her students’ inability to learn to perform on instruments, students in the current study already had the ability to perform on instruments, making them more successful, which seems to have kept their motivation and excitement level up and may have even generated more excitement for doing the project as it progressed.

Perceived Benefits

Study participants perceived several benefits from participating in the aural-based student-led learning project. I have grouped them into two categories: learning new skills and gaining confidence in those skills. Conversely, students perceived little benefit when they did not feel particularly challenged.

Skill-building

Participants commented that this project helped them get better at collaborating in small groups, including skills in communication and leadership. They also discussed that they improved at several aspects of learning aurally.

Collaboration and social growth. In this project, students learned to connect and to communicate in ways that they might not have had the chance to do in the large ensemble setting. Many students discussed the idea that working in small groups benefitted them by helping them learn to collaborate better which, in turn, made learning

easier. Tori commented, “I thought it was gonna be hard, but when you're in a group and you can talk with other people, it's way easier.” Alexis noted, “You learn how important other people's part is and when to back off or when to get louder. When to know what part is important or not.”

Several members spoke specifically about leadership as a benefit. Brittney considered herself a natural leader: “It’s a challenge as groups – as leaders,” signifying that she felt that she got to utilize her leadership skills in the project. On the other hand, David noted that he did not “really see [himself] as the leader of the group but I sort of assert myself and I'm sort of learning slowly but surely leadership skills.” Michael confessed, “If I had more people in my section [during the project], then I would be more of a leader.” It is unclear, when he said “section,” whether or not he meant baritone sax players or more people playing his part, but I think he could have meant either.

As the project grew closer to the end, three of the four groups, excluding Revolution, talked and laughed more often as they worked. These conversations were largely musical in nature, though not always directly related to the project. For example, Justin and Tim spent a lot of time during Session 5 discussing artists or music they listened to outside of class.

Because of this project’s opportunity for informal interaction, several of these students experienced social growth and increased their ability to talk to other class members. Luce (2001) noted that inclusion of collaborative learning in music education could “increase social capital, expand spheres of influence, develop bands of commonality and community, and have some fun in the process” (p. 24). My findings support a basic tenet of social constructivism that knowledge is socially constructed and

students learn through the help of adult guidance and more capable peers (Dewey, 1938; Duffy & Cunningham, 1996; Fodor, 1998; Rogoff, 1990; Vygotsky, 1978; Wiggins, 2009; Webb, 2012; Wood, Bruner, & Ross, 1976).

Aural learning. Members of every group said they got better at the skill of aurally learning music. More specifically, they felt they improved at the new skill of learning by ear, thinking about and listening to music in a different way, and listening to other parts within the recording and within their groups.

Aural learning as a new skill. Because many students in this study were accustomed to playing sheet music on their instruments in the large ensemble setting, most said reading sheet music was not challenging to them. Alyssa and others indicated, “Reading the music is easy . . . You just see the music and you play it.” In comparison to playing music by reading it, Tyler said, “It’s different coming up with music entirely from just listening to it and then actually playing it.” Kayla noted, “Usually I can just look at a page and be like, ‘Oh, this is how this rhythm goes.’ With this [project], you have to, like, listen to it and then try and figure out what it is by trying to learn the notes as well, which is challenging and different and I like that.”

A different way of thinking about and listening to music. The most discussed area in which students thought they improved was in learning a different way of thinking about and listening to music. Michael, Cody, and Brittney suggested that this project challenged multiple aspects of their musicianship. Michael said, “I think it incorporates everything you learn in a classroom setting into a little group setting.” Emily and Kayla talked about paying attention to different musical aspects that they had not considered before. Kayla summarized it well:

[Learning music aurally] is thinking outside the box, whereas you know inside the box, you just read the music, look at the notes, look at the key signature, time signature, and [in this project] you have to listen to it, and then pick out the key signature *and* the time signature and how fast it's going and what the rhythms are and who's playing what. It's just that extra bar that you have to reach to get to it.

Alyssa said that, though she was skeptical at first of learning by ear, going through the process of learning their song changed her mind about its benefit. She noted later that it helped her to understand music theory and make musical connections in a different way than when reading notation:

We had to figure it out for ourselves, like the notes weren't just given to us on a page. We had to sit there and figure it out and work through it, and so I think that we worked more sitting there working it out for ourselves and learning it that way. And then, for me anyways, it totally clicked in my head and I'm like, "Oh, that's that note because of this." Before this project I was totally like, "No, no you can't learn stuff by ear because then you won't get how it connects together in theory, blah blah blah," but working through this I almost understand it more. It makes sense, like I see from point A to point B instead of just having it given to me on a page.

Ways of listening. Students listened to the entire song, a specific section of it, or even a different version of the song in order to hear specific aspects with the purpose of replicating them. In interviews, they discussed improving their own listening skills in two specific ways: listening within the music and listening across the group. Rachel, Whitney, Alexis, Kayla, Tori, Cody, and Michael all spoke of "listening to parts I have not heard before" in the recording (Michael). Tyler, Justin, Michael, Chris, and Kayla talked about listening to the recordings specifically for parts that were difficult to hear. These students said things like, "hearing hidden parts" (Kayla) and "there's a bazillion layers" (Justin). The majority of participants expressed that outside of class, they listened to songs, in addition to the songs they were learning for the project, with more purpose than before the project. Michael said, "After this project, when I listened to [some of my favorite

songs], I heard stuff that I've never heard before, which means my ears are starting to be better.”

Participants also discussed listening to each other while playing, saying that because they had to listen purposively to other people's parts in these small groups, they became more aware of other people's parts as they played in large ensemble as well. Rachel, Whitney, Alexis, Justin, Kayla, and Clayton talked about listening to other people's parts in their groups more acutely. Rachel said, “[In band] I don't tend to listen actively to make sure I'm with the flutes all the time. I tend to listen to people that are closer to my [bassoon] part,” and she alluded to the idea that after this project, she was more aware now and listened to other instruments' parts. Whitney said, “You learn to really listen to everybody else's part, like so that it fits in with yours.”

Prior research has pointed out that musicians generally fall into two camps: those who can read music and those who can play by ear, and these groups often show contempt for each other (Woody, 2012; Lilliestam, 1996). Some students in my study initially voiced skepticism about the project, explaining that they did not think learning music by ear was a real or viable way to learn music. The fact that many study participants specifically said by the end of the project that they were thinking about music differently and making new connections suggests a shift in how they perceive and think about what music is, what musicians should be able to do, and what and who constitutes a musician. Woody (2012) claimed, “It is the ear that defines great musicianship” (p. 83). McPherson (1993, 1995) concluded that playing by ear is one of five performance skills essential for a balanced approach to teaching instrumental music and overall

musicianship. My project seemed to help students start bridging the gap between being musically literate in both venues.

Previous research has indicated that learning to play by ear may be a valuable tool in students' ability to enjoy music-making after they graduate high school, as they may have more readily available opportunities to engage with music informally than in a formal large ensemble setting (Woody, 2012; Woody & Lehmann, 2010). Woody (2012) noted that, "ideally, music education should equip young people to be lifelong music participants" (p. 87) and that learning to play by ear contributes to "active music participation for the entirety of [students'] adult lives" (Woody & Lehmann, 2010, p. 113). The findings in the current study support these findings that the skill of learning to playing by ear may lead to music-making throughout students' lives.

Confidence. A second area in which students felt they benefitted from this project was increased confidence. Clayton, Emily, Rachel, and Tori commented that the project gave them more confidence in their ability to learn aurally. Rachel said, "I've never been good at playing by ear so I liked having the opportunity to learn kind of what playing by ear is and to learn how to get on that roll of how to do it." Michael and Whitney noted that their confidence in their musical skills improved. Whitney said, "It was the first time that I had to learn something without music and then be confident. I had to play the countermelody by myself so I had to be confident in it and there was no backing down. I had to learn it and know it and perform it." Clayton said that because he had no problem learning the melody part on trumpet, he was not nervous performing in a small group in front of people, boosting his confidence about his soloistic playing. Clayton and Cody felt that because they got better at working with small groups, they were more confident

now to know how to take charge and get things done in a small group setting. Alexis and Michael noted that because they learned these new skills that they just “have more confidence” in general, not in any one particular musical area.

Holsberg (2009) found that large ensemble students who participated in a constructivist-based, student-centered music curriculum took ownership of their learning, were able to confidently perform the music they created, and were highly satisfied with their work. Likewise, Blair (2006) found that as students had more agency, they grew “in conceptual understanding (competence) and self-efficacy (confidence)” (p. vi). Green (2008) said this about her students: “a number of pupils reported that the aural learning experience, whilst making them feel more confident about playing an instrument, also increased their understanding of the difficulties involved, and along with that, their respect for musicians” (p. 64). Holsberg, Blair, Green, and I all found that students in our studies seemed to develop a greater sense of achievement, and in turn a greater sense of confidence, through participating in student-led learning environments (Blair, 2006; Green, 2008; Holsberg, 2009).

Non-challenges

I asked the participants if there were musical aspects that did not improve during the project. The answers they gave were things that they either found easy or musical skills that they did not address. Some of the motives or parts they learned were very repetitious. Clayton, Brittney (both from Revolution) and Haley (Rolling) commented that playing just those repeating parts over and over in subsequent rehearsals did not challenge them. Clayton and Brittney both said this project did not improve their playing range because they “didn’t really play very high or extend our range or anything”

(Clayton). Brittney also said her dynamic contrast did not improve. David mentioned that he did not think he learned anything new musically because “playing is just playing.” However, even though they commented on these non-challenges because I asked them directly, most participants still contended that overall, they enjoyed doing the project and learned many other things from it, both musical and extra-musical, as I have discussed.

Chapter 8 Recommendations for Practice

In this final chapter, I offer recommendations for large ensemble teachers, for music teacher educators, and for future research. I end with some concluding remarks. But first, I provide a summary of my project.

Summary of the Study

The purpose of this study was to investigate high school band students' processes of learning, as well as their responses and reactions to, creating arrangements within a student-led aural-based learning project. The following questions have guided this investigation.

1. How do high school band students navigate the process of aurally learning music?
2. What musical aspects do students address?
3. What are students' responses and attitudes toward student-led, aural-based learning projects?
4. What benefits do students perceive from participation in student-led aural-based learning projects?

Participants for this study were students in the 45-member advanced band of a high school band program (grades 9-12) in a large southwest city. Every student in the band class participated in the student-led aural-based learning project whether or not they were study participants. Students self-selected into a total of nine small groups of five students each. I selected four of these groups to examine as separate cases within the study, for a total of 20 student participants. After Session 5, only 19 student participants remained, as one participant moved away.

The study took place once each week during the regularly scheduled band class. In the first week of the seven-week project, I spent one class period introducing the project. The second day of the first week and for the next six weeks, I observed the band class, as students worked to create their arrangements by listening to recordings for an entire 50-minute class period one day each week. To introduce the project, in a large ensemble setting I initially played a recording of a pop tune, “Halo” by Beyoncé, for the students. As I played it, I gave no instruction other than to “Listen and, as you get more familiar with the song, see if you can figure out how to play any of it on your instrument.” I played the song several times and stood back to allow students to determine what they could figure out on their own with no teacher intervention, i.e., I “dropped them in to the deep end” (Green, 2008). After we had finished with the demonstration, I told the students they would engage in this project for the next seven weeks. Students chose groups of five students, decided on a song to learn to play, and worked on learning to play it by ear from a recording. They had a practice performance during Week 6 of the project where peers and teachers provided each group with written and verbal feedback. At the end of the seven-week period, following a final day of rehearsal, they performed their songs for the orchestra students, a few faculty members, and for each other in a class concert.

Data collection took place over an eight-week period. To gather data, I observed group rehearsals during band class and took notes for seven weeks; final interviews occurred during the eighth week. I also audio- or video-recorded most of each group’s weekly rehearsals and transcribed them. I interviewed student participants as a group three times—after Session 1, after Session 5, and a week after the final performance—for

about 25-30 minutes each. I also conducted an individual interview with one member of each participant group; individual interviews lasted 10-15 minutes each. I interviewed the band teacher three times for 45-60 minutes: before Session 1, after Session 5, and after the final performance. I also collected student artifacts. Using these data, I wrote rich, thick descriptions (Geertz, 1973) and conducted a cross-case analysis (Creswell, 2007).

Chapter 4 presented the four individual groups' cases. I introduced group members, providing their musical background and general thoughts about being in band. In order to paint a detailed picture of group dynamics and work ethic, I described one or two representative student rehearsal sessions in depth. I summarized other sessions, and provided accounts of each group's practice performances and final performances.

A cross-case analysis (Creswell, 2007) was presented in Chapters 5, 6, and 7, discussing my findings and relating my work to previous literature. In Chapter 5, I analyzed students' learning processes (problem finding, strategizing, and responding) and their group dynamics. Chapter 6 discussed how students learned to play by ear and the musical elements they dealt with. Chapter 7 examined students' attitudes toward the project and the benefits they perceived from the project. In this last chapter, I present recommendations for secondary large ensemble music teachers and music teacher education, as well as suggestions for future research.

Recommendations for Practice for Large Ensemble Teachers

In any classroom, the teacher must decide what type of classroom environment he or she wants to have. Wiggins (2009) suggested that teachers who subscribe to the idea of social constructivism tend to be student-centered in their approach to teaching, creating learning experiences where students interact with each other and work together to solve

real-world problems. Teachers and peers may scaffold student learning so students can construct their own understandings in a holistic context. For my study, as the teacher/researcher, I sought to create a constructivist environment by utilizing informal music learning methods within a student-led environment. I chose to be as hands-off as possible because, like Green (2008), I wanted to “drop students into the deep end,” making the project completely student-led to allow students to work with peers to create their own arrangements of songs by listening to recordings. Though students were allowed to ask teachers for advice, Nick, the band teacher, and I both attempted to avoid direct instruction, but instead to scaffold students’ work via asking questions, making suggestions, or providing feedback. In analyzing the data, I found that I also scaffolded students’ work through questions I asked in the weekly reflection sheets, and through unsolicited questions or advice I offered during some groups’ rehearsals. Through analysis of this student-led environment, I have identified methods teachers can utilize to better support students in this type of project, while keeping the focus on student-led collaboration and musical problem solving.

In this section, I make recommendations for more student input within a constructivist classroom. Strategies for contextual-based aural learning are discussed, as well as more connections between inside-school music and outside-school music. I also address issues of group dynamics, including collaboration and communication as well as leadership.

Student Input

The entire project was student-led, but not all students had equal input into the project. In this section, I discuss the degree to which students had input throughout the

project in terms of selecting their groups, selecting their songs, creating their arrangements, and solving musical problems. I also address the role teacher scaffolding played in students' learning and participation. I examine what worked well within this project, and make suggestions for teachers to create a more democratic process where all students are able to contribute to their groups in each of these areas.

Group selection. Students in this project chose their groups, and some discovered challenges with musical ability, instrumentation, transposition, and friendship. Friendship was a major factor in how students initially chose groups and in how they worked throughout the project. The positives of student-formed groups were that groups generally got along (with the Revolution group being the exception), students were able to help each other without frustration or judgment, and groups largely stayed on task throughout the project.

While having the option to choose groups may provide more opportunity for social growth for some students, other students may still feel left out or not able to interact. Teachers who notice students who may not be invited to join other students for musical or social reasons may choose to facilitate their group choice, by pointing out groups that might be a good fit or groups with leaders who might be more nurturing and willing to help them. Teachers could also monitor these groups to ensure that 1) those students are comfortable in their groups and that they are participating, and 2) that group leaders are involving those students. If needed, teachers could either work individually with students who may be having difficulty learning their parts or assign peer tutors to work with students who appear to be having difficulty (Webb, 2012).

Teachers may allow students to choose groups of varied sizes within a certain size range to allow more flexibility of number of students in each group and choice for parts division. In addition, to ensure that all students contribute in some facet during every session, teachers may need to specify to group leaders (whether appointed or not) that part of their role could be to make sure every person gives input. Teachers could also create a classroom environment where students have opportunities to openly discuss the process of democratic learning and the importance for every person to contribute to the group's progress. Larson (2010) created "Guided rehearsal sheets for leading a chamber music rehearsal" handouts that helped students navigate rehearsals, encouraged leadership to rotate among group members, and specifically directed leaders to ensure that all group members contributed in each rehearsal (Larson, 2010, Appendix, p. 167). I suggest that, for more democratic student input and participation, rather than assigning a student leader each week, teachers utilize a similar method that gives students choices in their roles and facilitates participation by each student.

In addition, to scaffold the process of students choosing groups, teachers may want to help students think about issues other than friendship that could affect their group's progress. They could foster discussions to help students discover how factors such as musical ability, instrumentation, and instrument transposition might affect their ability to work together in an efficient manner and have the most success in creating musical arrangements. As students formed their groups in this study, they did not seem to take musical ability into consideration. Therefore, weak, moderate, and strong musicians were mixed within each group. This worked well for most groups because the leaders appeared to identify the weaker musicians and often seemed to deliberately assign

someone else to play the same part with them. However, not all groups had enough members to double on parts, which seemed to cause stress for some weaker musicians when parts were not doubled.

In this study, due largely to varied instrumentation within groups, transposition emerged as a problem for most groups. Most students solved transposition problems by playing and matching pitches on their instruments, rather than discussing note names. Teachers may choose to group similarly pitched instruments when initially experimenting with a similar project. In addition, perhaps teaching transposition in a different or more direct way in the large ensemble would have helped students in this study understand how transposition works and more efficiently learn parts for transposing instruments.

Song selection. In this study, I intended that group members would each contribute song suggestions to their groups by bringing CDs, iPods, or other means by which they listen to music. From that pool of songs, each group would then vote on the song they wanted to play. However, I noticed that not all students presented song selections on the day they were supposed to choose. Those who did not provide a song choice did not have their “voices” heard, either by choice or by lack of initiative. After the initial introduction to the project, I asked students to bring song selections for consideration to the next day’s class. Had I allowed more time, or specifically encouraged individual contributions to the process, more students may have offered song selections to the group. Whatever the reason, this created significant questions within the group that would need to be addressed by others attempting a similar project.

To make song selection a more democratic process where all students have a say in song selection, teachers may want to assure that each person can contribute a certain

number of songs to the pool of song choices. Because this task may be overwhelming to some students (some may not listen to music outside of school; others may find it difficult to narrow down a list), teachers may also choose to provide a list of song choices students can choose from if they are unable to come up with songs on their own. Davis and Blair (2011) noted, as I did, that allowing students to have a choice in the songs with which they work fostered a high level of motivation, so it is preferable that the teacher not choose songs for student groups.

In large or small ensembles, aiding students or groups in evaluating the difficulty levels of songs or pieces may be necessary. For instance, rather than “dropping students in the deep end” as I did, teachers could model listening purposively to various songs to determine how many layers the song has, what key it is in, the difficulty of certain rhythmic passages, the range of instruments used in the song, or how it might transfer to a band instrument. After considering factors that make a song more or less difficult to perform, students may be able to make more informed song choices.

Creating arrangements. In addition to all students participating in group and song selection, it is preferable for all students to contribute to creating their arrangements. In this study, the primary leaders, secondary leaders, or strong musicians seemed to contribute the most to their group rehearsals. The moderate or weak musicians who felt comfortable contributing or getting the help they needed had some degree of input in the learning process or just worked on their own. However, the moderate or weak musicians who either chose a more passive position or felt actively silenced by other group members did not provide much input in their groups’ arrangements.

In order to get more students actively participating in small group projects such as the one in this study, teachers could model a democratic classroom environment within large group rehearsals by allowing and expecting all students to participate in all activities, whether playing, discussing musical issues, or making group decisions. Teachers can demonstrate that they value *all* students' thoughts and opinions, including weaker musicians or shy students, as well as student leaders or first chair players, setting an expectation that all students, regardless of musicianship level or leadership ability are invited to give input and that their input is valued and expected in ensemble rehearsals. Teachers can continue to expect and even raise these standards in small group projects by setting parameters that require all students to contribute. To oversee that all students actually do contribute, teachers may need to visit each group often to ensure that all students are engaged.

Student-led problem solving. Although their approaches were haphazard, students in this study were largely able to find and solve problems as they worked toward the goal of creating their own arrangements by listening to recordings. Previous research within constructivist classrooms indicates that students may feel empowered by setting their own benchmarks and working toward those goals (Allsup, 2002, 2003; Brooks & Brooks, 1993, 2001; Hasty, 2009; Wiggins, 2009). Because much of the problem solving students in this study did occurred in real time when groups faced real musical problems, finding those problems and strategizing solutions was critical to creating their arrangements (Duke, 2012). Teachers may want to create projects and classroom environments where students find and solve problems in a context that makes sense to them and that is based on their desire to move forward in reaching their goals.

Teacher scaffolding. Vygotsky (1978) discussed the value of assistance provided by a “more knowledgeable other,” and Bruner (1960) encouraged scaffolding for student learning. Previous studies based on constructivist music classroom environments have also suggested providing teacher scaffolding to help students make deeper connections and learn concepts more comprehensively and correctly (Fodor, 1998; Holsberg, 2009; Shively, 1995, 2002; Webb, 2010; Wiggins, 2009; Wiggins, Blair, Ruthman, & Shively, 2006).

In my study Nick and I provided scaffolding by walking around to groups and overseeing them, and by providing written feedback for the practice performance. Nick, more than myself, utilized scaffolding in a way that was reactive, in that he helped students with specific problems when they asked for his help, whereas I sometimes proactively asked questions when I felt students were stuck to help them move ahead. Also, as Larson (2010) and Allsup (2002, 2003) did in their studies, I asked students to write guided weekly reflections about their contributions throughout the project. This method of scaffolding also helped as a means of accountability for student participation because they had to document some degree of participation in the group’s progress. Although I only realized it in retrospect, the written reflections also directed students’ attention to musical issues they may not have considered on their own.

Though students in this study successfully created and performed their arrangements with little teacher help, teacher scaffolding could have played more of a role during student rehearsals, helping students create higher quality performances, as previous researchers have also noted (Fodor, 1998; Hasty, 2009; Holsberg, 2009; Shively, 1995, 2002; Webb, 2010; Wiggins, 2009; Wiggins, Blair, Ruthman, & Shively,

2006). Hasty (2009) proposed some teacher modifications to her study of informal learning in a general music class. These included more guidance by teachers when students work on individual student-centered types of projects, having students recreate small sections of the song instead of the whole song, and ways to ensure that students can get help from the teacher as they need it. Similarly, I encourage teachers to be more hands-on than I was in providing students with feedback, making suggestions, and asking questions throughout the project.

Teachers may want to scaffold student attention to specific musical elements, especially those that students in this study seemed to address least or not at all (i.e., tempo, rhythm, dynamics, intonation, mode, range, and improvisation) or that slowed them down most (i.e., instrumentation and transposition). In large ensemble contexts, I suggest teachers have more open discussions, do more exercises, or plan more varied activities in which students interact with musical concepts in ways in which they solve musical problems on their own and with the scaffolding of peers and the teacher. These may include activities such as those described in comprehensive musicianship approaches (Garofalo, 1983; O'Toole, 2003; Pogonowski, 2001; Sindberg, 2012). For example, students could do composition exercises or projects with specific parameters focusing on certain musical elements, transposition exercises where students solve transposition problems within music they play, or music theory lessons and projects within the context of the music they are working on in class, to help them construct deeper understandings about musical elements.

In small ensemble projects like the one in this study, in addition to having a practice performance as an informal checkpoint, teachers may need to build in time to

listen to each group once or twice to determine if they need guidance. With more teacher guidance and input, I wonder whether students in my study would have been even more creative in their musical decision-making. Following constructivist principles for scaffolding student learning, rather than providing students with solutions to problems, teachers could ask questions such as, “Have you made any decisions on how you will incorporate dynamics into your arrangement?” so students can explore their own solutions. More and better focused teacher questions could lead to student arrangements that are even more complex, more thought-out, and perhaps more interesting than those the students in this study created. In addition, having students think through and reflect on all of the musical issues that composers and arrangers address could give them a greater understanding and appreciation for what it takes to create an arrangement, whether it is a pop song or an orchestral composition.

Aural Learning

Research indicates that development of aural skills may help foster students’ musicianship (Davis, 2008, 2010; Green, 2001; Lilliestam, 1996; Musco, 2010; Stringham, 2010; Woody & Lehmann, 2010), lifelong music participation (Woody & Lehmann, 2010), and other musical skills (Dalby, 1999; Duke, 2012; Gordon, 1993, 2003; McPherson 1993, 1995; Woody, 2012). In my study, students with prior experience learning by ear were more quickly successful with the project, suggesting that aural skills can be developed and improved through practice. Therefore, I highly encourage teachers to utilize a variety of aural learning activities in both large and small ensemble configurations.

In this study, students created their arrangements by listening. The only written notation they used was what they wrote for themselves. The teachers did not tell them whether they were correct or not in their interpretations of their parts. Individually and with the help of peers, students were able through listening to create and perform their arrangements. To help students develop more fluency with the skills needed to learn and create music aurally, in the large ensemble settings perhaps teachers could give more opportunities to interact with and learn music by ear. Putting aural learning or playing by ear in the context of real-world problem solving and providing students with a need to know how to play by ear seems to be important in their making those connections and in constructing their own understanding of how to play by ear. Teachers could, however, scaffold development of aural skills through strategies that can help students be successful, such as some of Dalby's (1999) applications of Gordon's (1993) Music

Learning Theory:

1. Sing to improve intonation and phrasing.
2. Postpone reading in beginning instruction.
3. Teach familiar tunes by ear.
4. Establish tonal and rhythmic context.
5. Teach the bass lines.
6. Internalize rhythm through movement.
7. Use tonal patterns to improve intonation.
8. Use Gordon's rhythm syllable system.
9. Use tonal solfege in learning sequence activities to develop audiation of tonalities and tonal functions.
10. Begin rhythm reading with rhythm patterns instead of isolated whole notes.
11. Teach notation as recognition rather than decoding. (Dalby, pp. 22-25)

I believe that these exercises can be helpful strategies for providing students with tools to use in solving musical problems by ear on their own. It is important to remember that, though these strategies in themselves can be taught as decontextualized practices and

aural exercises, based on constructivist learning theory, contextualizing them for students within real musical contexts may also be important for students to value these basic skills for aural learning. It is in these student-led, self-paced activities that students could have opportunities to take what they have learned about aural learning and other musical elements in class and “flub around” on their own to develop skills and a deeper understanding of how to apply them.

Additionally, I found that the musicians in my study used strategies to learn by ear that were similar to those found by other studies of informal learning:

1. Distracted listening (Green, 2001)
2. Purposive listening (Green, 2001; Jaffurs, 2004)
3. Following a more haphazard manner of learning of songs rather than using a systematic approach of scales and etude exercises (Campbell, 1995; Green, 2001; Jaffurs, 2004)
4. “Fiddling around” with musical ideas until they figure out what they need to (Davis, 2005, 2008, 2010; Duke, 2012)
5. Allowing students to use their own learning strategies to construct their understandings of how to play by ear (Davis, 2008, 2010; Green, 2008)
6. Working with peers and in small groups to help each other (Bennett & Dunne, 1992; Bielaczyc & Collins, 2000; Campbell, 1995; Green, 2001, 2008; Jaffurs, 2004)

Through a balance of large ensemble aural activities and student-led, experiential-based activities and projects, coupled with research-based strategies for aural learning, students may gain a more comprehensive understanding of how musicians who are

formally and informally educated learn music. It is important for students to understand that these different learning methods are interrelated and to discover that learning by ear is a much-used form of musicking both inside and outside of the formal Western art tradition.

Relation to Outside-of-School Music

Music educators have researched ways to bridge the gap between inside- and outside-of-school music activities (Campbell, 1995; Davis, 2005; Green, 2008; Jaffurs, 2004; Rodriguez, 2004; Woody, 2012). They suggest that bridging this gap is valuable because it can help make stronger connections between the music students study in school and music they engage with outside of school, and thus could increase student motivation to engage with music. In addition, previous research indicates that teachers who take a genuine interest in their students' music, learning from them and incorporating students' music into the music classroom, can create a richer learning experience and foster greater student achievement (Jaffurs, 2004).

In this study, students reported that they enjoyed learning inside the school classroom music they listened to outside of school. If students are to be more self-sufficient musicians, then teachers may want to help them relate the tools and vocabulary they learn in school to the music they listen to and participate in outside of school. Discussing this direct relationship may help students make more explicit connections between school music and outside-of-school music. Might these connections lead to more organic jam sessions among small groups of "formally educated" music students outside of the classroom? Might they feel more equipped to create their own music in informal settings without notated music and without a conductor? And might students listen more

critically to the music they choose to listen to outside of school? Might they become lifelong music participants (Woody, 2012)?

Allsup (2002, 2003) allowed students to bring instruments from home (that were not their band instruments) to work on their compositions in his study. He discussed how inclusion of these additional instruments created a hybrid music-making experience for students. Perhaps teachers could incorporate more outside-of-school instruments into both the large and small ensemble projects. If I had opened up this project to more than just band instruments, what would the possibilities have been? More interesting and diverse arrangements? Fostering even greater student ownership of their creations and motivation to work on their arrangements outside of school? Creating spaces for other instruments, such as guitars and keyboards, to be included in the traditional large ensemble setting and literature could allow for more connections to outside-of-school genres, instruments, and music-making methods; and could motivate students who play non-traditional band instruments to join the large ensemble. This hybridization could also further expand students' motivation and ability to create music for different genres and group configurations.

Group Dynamics

Collaboration and communication. In this study, we told students that if they needed help with musical issues, they could ask any of the teachers. However we did not establish similar expectations for behavior or interpersonal problems. The band teacher in this study made it a priority to foster a classroom culture of collegiality among peers, to which he credited the lack of any major behavioral issues or disagreements throughout the project. I believe this air of respect and collegiality was reflected in the way that most

of the groups interacted with one another. However, as expected with high school-aged students, occasionally when students were left unattended, minor problems arose, such as students being off task and being unable to solve disagreements. Particularly in a setting where collegiality and respect are not built into the fabric of classroom interactions, more teacher intervention may be needed to resolve disagreements or monitor behavior.

Based on findings in previous research, as well as this study, teachers who plan to do similar projects may actually find that concerns about off-task behavior are unfounded, simply because students' motivation levels are high. A teacher in Green's (2008) study noted his concern that with the freedom the students were given, "that they would take advantage of it and it would create chaos and ill discipline and misbehaviour" (p. 115). However, he said he "was very wrong. By the first lesson it was quite clear that pupils were extremely excited about the work, very highly motivated, and in fact worked on task throughout the entire Stage 1 process" (p. 115). Other teachers were also surprised that they remained on task so well. Green attributed part of this surprising on-task behavior to "flow":

Music engages music-makers and listeners in an inter-sonically organized flow of time. The concept of experiential 'flow' and the enjoyment that is associated with it . . . can offer some explanation of how pupils managed to stay on task. . . . I have suggested that music's cultural delineations, when positive for the listener, can affirm a sense of identity and belonging. The pupils' familiarity with their chosen music's inter-sonic meanings, combined with their positive identification with its delineated meanings can together be understood to lead to a sense of musical 'celebration.' (p. 115-116)

Green further suggested that when teachers intervene too much in students' learning processes or "structure their tasks, set them goals and assess them at every possible moment, we may be interrupting the possibility of celebration for them – and of enjoyment, 'flow', and even to some extent, of learning" (p. 116). Findings in the current

study support Green's (2008) finding that students remained on task and therefore experienced little to no behavior problems, in large part because they were extremely interested and invested in the work that they were doing.

Large ensemble teachers at the high school level may already have small-group rehearsal built into their programs in the form of sectional rehearsals that are run by section leaders, as did the large ensemble group in this study; because of this, students may be used to operating on their own without constant teacher supervision. If this is not the high school classroom culture, however, supervision may be more of an issue due to students' maturity level and musical ability. The same may be the case for teachers undertaking the same type of project at the middle school level. Depending on the size of the program and the classroom layout, teachers may need to be more creative in implementing small group projects in order to supervise all students. For example, they could have all students separated within one large room, work outside, or have a rotation system where one small group at a time rehearses in a designated space while the others are in large ensemble rehearsal. Teachers could also limit the length of time students work unsupervised, and provide accountability through use of reflection forms (Larson, 2010).

Leadership. About half of the students in this study were able to take on roles as primary and secondary leaders. The secondary leaders in Rolling, Rikki, and Revolution emerged as leaders when the primary leaders in their groups were absent during sessions, and the secondary leaders in Kids emerged because of there seemed to be no strong primary leader who initially took charge of their group. Regardless of their prior experience, those in the current study who were most successful at being leaders were the

ones who exhibited the most musical knowledge and initiative in their groups. They were the group members who were most able to effectively help the group move forward in creating and learning their arrangements.

Prior research indicates that students who are the leaders are most often the more knowledgeable peers (Finney & Philpott, 2010; Luce, 2001; Rogoff, 1990; Vygotsky, 1978). Teachers could scaffold student learning of leadership skills and musical knowledge by modeling ways to ask questions, make suggestions, or provide feedback to help different individual students decide how to solve musical problems. Depending on each student's place within their zone of proximal development (Vygotsky, 1978), teachers can help students construct and deepen their own musical understandings, setting them up to become more knowledgeable. Therefore, the less knowledgeable students may become more knowledgeable students later, and may become leaders of their groups the next time such a project is undertaken. In addition, facilitating student-led projects such as this one, that are non-hierarchical with no pre-set leaders, could help students who have never been leaders or seen themselves in that role have a chance to start cultivating those skills or further develop them, specifically students who are more knowledgeable in the subject area but may not have had the opportunity to hold a leadership position.

Recommendations for Practice in Music Teacher Education

In this section, I discuss recommendations for practice in music teacher education. These include providing preservice music teachers with greater and more varied opportunities for aural learning, more work in student-led small groups, and more varied musical experiences.

Aural Learning

One major aspect of this study focused on aural learning. In order for preservice teachers to feel more comfortable engaging students in aural learning, especially via informal learning methods, they need to experience playing by ear and be comfortable doing it themselves. Prior research on informal learning in music teacher education has shown that collegiate music educators can facilitate informal learning and aural learning within the college classroom, suggesting that listening to music deeply is beneficial (Davis & Blair, 2011; Feichas, 2010; Wright & Kanellopoulos, 2010). Collegiate music theory teachers, as well as collegiate music education professors, could create contexts in which preservice teachers experience playing music by ear, for example, with small group projects such as those in this study where students must interact with music without using notation. Teachers allowing for a small portion of class time in ear training classes or in methods courses could provide experiences for music majors, including preservice music teachers, to learn a section of a song by ear, such as a chorus or bass line of any melody. Davis and Blair (2011) specifically led discussions within a music education course where the students experienced informal aural learning processes, then analyzed and discussed them. I suggest similar opportunities for students to reflect on their learning methods in these contexts, to inform their own learning, as well as their comfort in their abilities to engage their future students in playing by ear in an informal context.

The current study suggests value in situating aural skills in a classroom environment where students solve real-world, contextualized musical problems. Students in both this study and previous research seemed to construct deeper understandings of

how to play by ear in informal, situated contexts (Bennett & Dunne, 1992; Bielaczyc & Collins, 2000; Campbell, 1995; Davis, 2005, 2008, 2010; Duke, 2012; Green, 2001, 2008; Jaffurs, 2004). Similarly, contextualizing aural skills within an environment where preservice teachers solve authentic musical problems may help them better construct their own musical knowledge and aural skills (Davis, 2008, 2010; Green, 2001; Lilliestam, 1996; Musco, 2010; Stringham, 2010; Woody & Lehmann, 2010).

Student-led Learning

Research suggests that providing contexts for preservice teachers to solve real-world musical problems in small groups may not only help them construct their own musical learning, but could also help them explore ways to offer varied learning environments in their future classrooms (Davis & Blair, 2011; Finney & Philpott, 2010; Morford, 2007; Westerlund, 2006). Teacher educators can offer opportunities for self- and peer-directed learning to encourage preservice teachers to experience the benefits of and be comfortable with attempting student-led small group projects, and ultimately to think about teaching in a more constructivist, student-centered manner. This could be achieved by recreating this type of project within a methods course or, where possible, by creating a course where facilitating student-led learning is the focus.

Varied Musical Experiences

In my study, students seemed to make connections between the project, the music they listen to outside of school, and the music they played in large ensemble. These connections often may not be fostered in the curriculum many undergraduates experience. Preservice music teachers may benefit from having a variety of opportunities to solve real musical problems in contextual situations in their secondary school music

classes and at the collegiate level. Westerlund (2006) recommended a “more multimusical music education” (p. 123) for preservice music teachers, based on different learning methods that occur naturally within various musical genres. She proposed inclusion of “peer-directed learning and students’ own real-life projects within their institutional borders” (p. 123). Similarly, Davis and Blair (2011) suggested study of “many kinds of music and an understanding of genre” to allow further exploration into students’ musical preferences.

I also propose varied musical experiences for preservice music teachers. These could include practices such as learning music by ear; learning more varied genres of music (e.g., rock band, electronic music, world music), working in student-led small groups; developing some degree of proficiency on instruments such as electric guitar or drum set; engaging with music by composing and improvising on their major or other instruments; or song-writing. Although many universities offer some of these classes, often music education majors do not have the opportunity or requirement to take them, leaving them little to no opportunity for engagement with music content or methods beyond the realm of the traditional large ensemble and Western art music. I also suggest that music teacher educators could integrate these kinds of experiences in current classes that music education students are required to take.

Suggestions for Research

In this section, I suggest areas for further research based on my findings. These include continued examination of already-occurring varied musical experiences in some secondary instrumental ensembles; replication of this project in various settings; research

on application of constructivist principles in the band room; and construction and examination of different types of aural learning projects.

Varied Musical Experiences Already Occurring

Music education researchers have provided multiple reasons to support a traditional ensemble paradigm that is more inclusive of other means of engaging with music (Allsup, 2002, 2003; Allsup & Benedict, 2008; Davis, 2008; Duke, 2012; Pogonowski, 2001; Shively, 2002; Sindberg, 2006, 2012; Webb, 2012; Williams, 2011). A growing body of literature offers specific examples of ways to incorporate these ideas (Allsup, 2002; Berg, 1997; Davis, 2008; Duke, 2012; Holsberg, 2009; Larson, 2010; O'Toole, 2003; Shively, 2002). All of this literature centers on the premise that traditional ensemble classes could include various ways of engaging students with music to educate more musically literate, critically aware students who are able to engage with varied musics through multiple means throughout their lives. This study provides a model similar to prior studies, through the lens of informal, student-led, aural learning.

My findings suggest that music researchers might continue to explore combinations of informal and formal music learning approaches. Researchers could actively seek out teachers who are already combining the practice of aurally learning music in their classrooms with the traditional paradigm of reading notation in a large-ensemble setting. Both quantitative and qualitative research is needed to identify the strategies and activities teachers are using, and how these activities affect large ensemble sound and individual student learning. More research also needs to be conducted to determine how combinations of these two traditions might make music education more “sticky, meaning that it must become potent and irresistible” and “connect people to

music in ways that are both personally fulfilling and educationally valid” (Kratus, 2007, p. 46).

Replication of this Project

This type of project could be replicated in band classes at the elementary and middle school levels to determine adaptations that would allow students of various ages and skill levels to be successful with this or similar projects. Additionally, especially in terms of autonomy and open-endedness, future research could investigate the degree to which elementary and middle school students would be able to collaborate in student-led small groups. The same question must be examined in terms of skill level as well: to what degree would elementary, middle, and high school students’ skill level allow them to have success within student-led small groups? Davis (2008) investigated elementary beginning band students working in an informal setting. However, replication of the current study at the elementary and middle school levels could strengthen these and Davis’ findings. In addition, replication of this project at the high school level with more teacher scaffolding is needed to the in on the quality of student learning. Also, this project could be replicated in other large ensemble classes such as choirs and orchestras at all levels.

No quantitative research has been conducted to determine the effects of this type of student-led aural-based project on student learning within the large ensemble setting. Replication of this project with use of quantitative measures to examine pre- and posttest scores on individual student learning and large ensemble sound is needed. I also suggest quantitative experimental studies to address questions such as these: Does aural learning via informal learning methods have an effect on overall large ensemble performance

achievement? To what extent would individual students' aural skills improve? What other musical skills might improve? To what extent would students' skills measurably improve compared to their perception of improvement?

Constructivism in Large Ensemble Classes

A rich history in educational research indicates that when students engage in the processes of solving real-world musical problems on their own and in small groups, they construct deeper understandings. I suggest further research on these types of constructivist problem-based learning approaches within large ensembles (band, orchestra, and chorus classes). Recent research has indicated that spaces exist to foster a constructivist environment in a band classroom (Davis, 2008, 2010); other recent research has provided constructivist models for band (Holsberg, 2009; Shively, 1995, 2002). All of this research discusses the importance of the teacher's role of scaffolding. I suggest further study of classrooms that incorporate constructivist models of teacher scaffolding in a large ensemble classroom. In what ways do teachers scaffold student learning instead of having students just respond to instruction? How do they allow peers to scaffold each others' learning? What are the possibilities for student learning when these types of classroom models are implemented?

More Aural Learning

In my study, several students suggested that playing by ear is difficult, while reading notation is quite easy. It seems to me that having students learn large ensemble music by ear could help students think in a different way. How successful would they be? What would their process be? What parts would they choose to play? Would they consider it easier or more difficult than learning pop music by ear? How would they

enjoy it? I plan to conduct a study where high school students learn a published Grade 1 band piece by ear, as a follow-up with the students who participated in this study.

Final Thoughts

I have made several recommendations for practicing music teachers, music teacher educators, and for research. For practicing music teachers, I have made suggestions for building aspects of this project into their regular ensemble rehearsals as well as recommendations for doing this type of project within their curricula. Suggestions include incorporation of student input, incorporation of contextually-based aural learning, relating inside-school-music to outside-of-school music, and helping students navigate the group dynamics of small group work. Recommendations for music teacher educators include providing preservice music teachers with more varied methods of aurally learning music; engaging in student-led, small group musical experiences; and having more varied musical experiences. Suggestions for research include more research on varied musical experiences that may already be occurring in music classrooms; replication of this project in other settings and with other music classes; further examination of constructivism in large ensemble classes; and more studies that examine aural learning in music classes.

Because of the informal nature of the project, students had to exercise extra-musical skills that might not normally be used during large ensemble: they learned to effectively communicate and collaborate with each other without the help of a teacher. Some were able to take on a new leadership role or work to become better leaders. Finally, many students grew socially from this student-led project, engaging in conversation and developing a greater feeling of friendship and belonging than before the project.

To foster both musical and social skill development, the large ensemble classroom might include such activities as discussion in class, more independent student engagement, and additional small-group student-led projects. In order to decide how and to what extent to include these activities, music educators could think of using a this-with-that approach in their classrooms instead of an either/or strategy. Jorgensen (2003) purports a dialectic approach to music education, which means

Teachers analyze the theoretical possibilities flowing from the implementation of alternatives X and Y, determine if it is possible to combine them and in what ways, create the appropriate “mix,” and adjust or correct the balance between them so as to maximize the advantages and minimize the disadvantages of the theoretical possibilities either taken alone or resulting from their combination. (p. 13)

She compared the alternatives teachers face when choosing what to include in their classrooms to actors on a stage or an artist’s peripheral and focal awareness.

Vernon Howard explains that the artist (read teacher) is grappling with various skills, some of which are in the foreground while others are in the background. Sometimes it may be necessary to translate peripheral awareness into focal awareness, attend to a particular aspect, and then, when it is learned or mastered, relegate it to peripheral awareness. Even when the skill is in peripheral awareness, it is still operating as part of the means whereby the artist (teacher) makes course corrections along the way toward the making of a work of art. It is an integral part of the artistic process. (Jorgensen, 2003, p. 13)

Both the large ensemble paradigm and the student-led small group paradigm could be thought of as the actors on a stage, where they each take turns being in the foreground and the background but work together to create an environment conducive to multiple ways of students engaging with music. Data in this study suggest three continua along which an ensemble rehearsal may appear: 1) creating music and performing pre-composed music; 2) group and individual musical progress; 3) notation-based and aural-based musical engagement. Jorgensen concludes that, “Among the advantages of this

dialectical approach are its open-endedness, interconnectedness, and situatedness, allowing for multiple solutions to educational problems” (p. 13). If we desire that students have varied musical experiences and construct deep musical understandings, then we must consider offering large ensemble experiences that include spaces where students are allowed to engage with multiple musics through multiple scenarios.

The majority of participants in this study spoke about how this project helped them listen to and think about music differently. Their statements made me question my own philosophy of teaching music. What is my goal as a music educator? What do I want my students to learn? Do I want them to have the best comprehensive musical education I can provide where they engage with many aspects of music? Do I want them to perform on their instruments to a very high degree at concerts? To what extent do I incorporate my students’ desires within their musical education? How will my students’ perspectives and opinions shape the curriculum I plan? Can I incorporate both of these paradigms of music education successfully? If we see the importance of all three continua and set our goals to achieve them, I believe it can be done. But to accomplish this, we will want to facilitate unstructured experiences, allow time during class for students from P-16 to work outside of the large ensemble model, and not get in their way – allow them to be creative as well as perform at a high level; allow them to “flub around” and solve problems on their own at their own pace as well as create structured teacher-directed class time where we as the teachers can direct and pace student and class progress; and allow them to listen purposively and learn music aurally as well as to proficiently read traditional notation that is important to the performance of Western art music. But to do

both, I invite others to join me in rethinking our philosophies and reconsider that multiple ways of doing music are valuable and important to our students' musical education.

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APPENDIX A

SAMPLE PARENT CONSENT FORM

Dear Parent:

I am a graduate student under the direction of Dr. Margaret Schmidt in the Music Education Department at Arizona State University. I am conducting a research study to observe your child's band classroom because his/her band teacher, Mr. James, will be trying some new and innovative teaching methods in order to help students improve their aural skills during band this semester. Part of my research will include observing and interviewing students in the band.

I am inviting your child's participation, which will involve observing and interviewing him/her 3-4 times during the course of this semester. Each interview will take approximately 30 minutes to an hour. With parent's and student's permission, the interviews will be audio- and video-recorded for transcription purposes. In addition, your child will be asked to complete weekly short written reflections recording their thoughts about the unit. Your child's participation in this study is voluntary. If you choose not to have your child participate or to withdraw your child from the study at any time, there will be no penalty – it will not affect your child's grade. Likewise, if your child chooses not to participate or to withdraw from the study at any time, there will be no penalty.

Your child will benefit from this project. If he/she participates, he/she will develop much stronger aural learning skills, which will help in all aspects of musicianship. He/she will also cultivate group collaboration and communication skills since a large part of the learning will take place in small groups. There are no foreseeable risks or discomforts to your child's participation. In order to protect your child's identity, participants' names and the name of the school will not be identified; students will be given pseudonyms for the study. Responses will be confidential. The results of this study may be used in reports, presentations, or publications but your child's name will not be used.

If you have any questions concerning the research study or your child's participation in this study, please call me at 205-482-5910.

Sincerely,

Amy Spears

By signing below, you are giving consent for your child _____ (Child's name) to participate in the above study. Your signature gives the researcher permission to audio- and video-record interviews for transcription purposes.

Signature

Printed Name

Date

If you have any questions about you or your child's rights as a subject/participant in this research, or if you feel you or your child have been placed at risk, you can contact the

Chair of the Human Subjects Institutional Review Board, through the Office of Research Integrity and Assurance, at (480) 965-6788.

APPENDIX B

SAMPLE WRITTEN CHILD ASSENT FORM

I have been informed that my parent(s) have given permission for me to participate in a study concerning "Using student-centered instruction to improve aural skills in high school band students."

Mr. James will ask the whole class to learn some new music this semester. I agree to be observed by the researcher during band class. She will ask me to write a short weekly reflection and to be interviewed 3-4 times to discuss my thoughts about how I am learning music during this project.

My participation in this project is voluntary and I have been told that I may stop my participation in this study at any time. If I choose not to participate, it will not affect my grade in any way.

Signature

Printed Name

Date

APPENDIX C

LETTER OF APPROVAL FROM ARIZONA STATE UNIVERSITY

INSTITUTIONAL REVIEW BOARD

To: Margaret Schmidt
MUSIC BUIL

From: Mark Roosa, Chair
Soc Beh IRB

Date: 08/19/2011

Committee Action: **Exemption Granted**

IRB Action Date: 08/19/2011

IRB Protocol #: 1103006160A001

Study Title: Traditional secondary school performing ensembles incorporating informal learning practices

The above-referenced protocol is considered exempt after review by the Institutional Review Board pursuant to Federal regulations, 45 CFR Part 46.101(b)(2) .

This part of the federal regulations requires that the information be recorded by investigators in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects. It is necessary that the information obtained not be such that if disclosed outside the research, it could reasonably place the subjects at risk of criminal or civil liability, or be damaging to the subjects' financial standing, employability, or reputation.

You should retain a copy of this letter for your records.

APPENDIX D

NOTIFICATION OF APPROVAL

FROM THE SCHOOL DISTRICT OFFICE

> Date: Wed, Sep 21, 2011 at 9:20 AM
> Subject: ASU Research project
> To: Amy Spears

Amy,

The Executive Team has reviewed your application to conduct research and has approved your request. They did indicate that the district would like a copy of your written report, once you complete your research. If you need any additional assistance from me, let me know.

Thanks,
Maya

----- Forwarded message -----

Date: Mon, Aug 15, 2011 at 8:56 AM
Subject: Re: ASU Research project
To: Nick James

Please attach the research project proposed by Amy and I will submit it to the District Office for their review.

Kristen

On Mon, Aug 15, 2011 at 8:53 AM, Nick James wrote:

Kristen-

I would like to participate in the research project proposed by Amy Spears (Doctoral Candidate at ASU). The project is based on ear training curriculum that currently exists in our District Curriculum maps.

Examples:

FA-PEB-S1C5-106
FA-PEB-S1C5-108
FA-PEA-S3C1-110
FA-PEB-S1C2-103
FA-PEB-S1C3-102
FA-PEA-S3C1-102
FA-PEA-S3C1-112
FA-PEA-S3C2-103

etc...

As an educator, I am interested in the results of the study from two angles:

1. Do our current ear training procedures accepted in "music education" work?
2. What modifications can I make to better serve our MHS students?

As discussed in her formal proposal, she will not be taking over any instructional time that is not currently allocated for such activities. Additionally, she will not be assuming an instructional role in the classroom. Her role is data collection.

If you have any further questions, please let me know.

Thank you.

-Nick

APPENDIX E

SAMPLE STUDENT INTERVIEW QUESTIONS

Interview 1

1. Tell me your name, grade, age, instrument, and how long you have been in band
(what year did you begin playing).
2. Did you have any musical training before joining band?
3. What do you like most about band?
4. What do you like least about band?
5. Do you like concert or marching band better? Why?
6. Why are you in band?
7. How did you decide you wanted to be in band?
8. Do you/have you ever tried to play one of your favorite songs on your instrument?
If so, why? And explain what you did. Were you successful at it?
9. What song is your group doing for this project?
10. How did you decide on this song?
11. What point are you at in your learning of this song right now?
12. How are you going about learning it?
13. Would you say you are learning the song by yourself or with the other people in
your group? Please explain what you/you all do?
14. What is your favorite thing about the project at this point?
15. Do you have any frustrations about the project at this point? Please explain.
16. Would you say learning music by ear is easy or hard? Why?
17. Have you had any new revelations thus far in the project?/are you thinking about
music differently in any way?
18. Do you like working in your group? Why/why not?

19. Are you thinking about the music differently than you would if you had musical notation in front of you? How? Why?

Interview 2

1. How many songs did you end up learning in your group?
2. What did you like most about this project?
3. What did you like least?
4. What was the easiest thing for you to master?
5. What was the most difficult thing for you to master?
6. Describe your process of learning your song.
7. On a scale of A-F, what would you rate the level of the group's performance?
Why?
8. On a scale of A-F, what would you rate the level of your performance? Why?
9. What would you have done differently if you had to do it over?
10. Tell what song you are learning and how it is going overall.
11. To what extent do group members work together?
12. To what extent do group members work alone?
13. How do you go about getting the song together (since there is no conductor)?
14. Have you had any new revelations thus far in the project?/are you thinking about music differently in any way?
15. Do you like group collaboration? Why/why not?

Interview 3

1. What point are you at in your learning of the piece right now?
2. How are you going about learning it?

3. Would you say you are learning the song by yourself or with the other people in your group? Please explain what you/you all do?
4. How do you go about learning the song?
5. What is your favorite thing about this second phase of the project?
6. Do you have any frustrations about the project at this point? Please explain.
7. Would you say learning this music by ear is easy or hard? Why?
8. Have you had any new revelations thus far in the project?/are you thinking about music differently in any way?
9. Do you like working in large or small groups or alone? Why/why not?
10. How does learning a band piece compare to learning a pop tune by ear?
11. Are you thinking about the music differently than you would if you had musical notation in front of you? How? Why?

APPENDIX F

SAMPLE BAND TEACHER INTERVIEW QUESTIONS

Interview 1

1. What is your educational background?
2. What is your teaching background?
3. Why did you agree to do this project?
4. What surprised you about the project?
5. What didn't surprise you about the project?
6. What were the biggest challenges you dealt with during the project?
7. Did you feel your role as a teacher changed during the project?

Interview 2

8. What surprised you about the project?
9. What didn't surprise you about the project?
10. What were the biggest challenges you dealt with during the project?
11. Did you feel your role as a teacher changed during the project?
12. Do you think this had an impact on the large ensemble sound?
13. Would you do this again? Why/why not?
14. If so, what changes would you make?
15. Are there any students that stood out to you throughout this project who you didn't expect to excel or who you expected to excel but did not?

APPENDIX G

SAMPLE WEEKLY REFLECTION FORM

Student Reflection Form

Name:

Date:

Instrument:

Name of song:

Names of Group Members:

1. What did your group do during class today, if different than what you?
2. What did you, yourself do to contribute to the group's productivity today?
3. What was fun about what you did today?
4. What was frustrating about what you did today?
5. At least one interesting thing that happened today was:
6. Give an overall synopsis of where your group is in the project at this time (for example, we have learned the melody of the chorus and the verses and can play it together).
7. Our goal for the next class session is:
8. My personal goal for the next class session is:

APPENDIX H

SAMPLE BAND DIRECTOR CONSENT FORM

INTRODUCTION

The purposes of this form are to provide you (as a prospective research study participant) information that may affect your decision as to whether or not to participate in this research and to record the consent of those who agree to be involved in the study.

RESEARCHERS

I am a graduate student under the direction of Dr. Sandra Stauffer in the School of Music at Arizona State University. I am conducting a research study to examine band teachers who are incorporating new and innovative teaching methods in their large ensemble classes.

DESCRIPTION OF RESEARCH STUDY

If you decide to participate, then you will join a study involving research of band, orchestra, or chorus teachers around Phoenix who are incorporating new and different teaching methods into their large ensemble classes – methods that could be considered student-centered, or anything that is different than the usual way of running a typical “large ensemble rehearsal.” If you say YES, then you will be asked to allow me to come into your classroom 2-3 times over the course of the semester and observe what you are doing. I will also want to interview you 2-3 times as well. I will not be critiquing your teaching methods, rather I will be observing what the classroom environment looks like, what different teaching methods you are using, and gaining a better understanding of the effects they have within your large ensemble and on individual students. I would also like to interview students and the teacher 2-3 times over the course of this semester. Each interview will take approximately 30 minutes to an hour. With participants’ permission, the interviews will be audio recorded for transcription purposes and will be discarded upon completion of the study. Participants’ names and the names of schools will not be identified and will be given pseudonyms for the study. Approximately 4-6 local music teachers along with some of their students will be participating in this study.

RISKS

There are no known risks from taking part in this study, but in any research, there is some possibility that you may be subject to risks that have not yet been identified.

BENEFITS

The main benefits of your participation in the research are to be able to contribute insight into potential ways for other large ensemble teachers to improve their teaching methods, i.e. more varied teaching methods in order to enhance ensemble sound as well as individual student learning. Also, for you and your program, you will be able to find out from your students’ perspectives what they are learning from and how they feel about different types of teaching methods, which can inform your practice even further.

CONFIDENTIALITY

All information obtained in this study is strictly confidential. The results of this research study may be used in reports, presentations, and publications, but the researchers will not identify you. In order to maintain confidentiality of your records, participants’

names and the names of schools will not be identified and will be given pseudonyms for the study. The only people that will have access to the confidential information are me and my professor. Audio recordings will be destroyed upon completion of this study.

WITHDRAWAL PRIVILEGE

Participation in this study is completely voluntary. It is ok for you to say no. Even if you say yes now, you are free to say no later, and withdraw from the study at any time. Your decision will not affect your relationship with Arizona State University or otherwise cause a loss of benefits to which you might otherwise be entitled.

For your students who volunteer to participate, their participation is voluntary and withdrawal from the study will not affect their grade. Audio recordings will be destroyed and will not be included in the study if they withdraw.

COSTS AND PAYMENTS

There is no payment for your participation in the study.

VOLUNTARY CONSENT

Any questions you have concerning the research study or your participation in the study, before or after your consent, can be answered by Amy Spears.

If you have questions about your rights as a subject/participant in this research, or if you feel you have been placed at risk; you can contact the Chair of the Human Subjects Institutional Review Board, through the ASU Office of Research Integrity and Assurance, at 480-965 6788.

This form explains the nature, demands, benefits and any risk of the project. By signing this form you agree knowingly to assume any risks involved. Remember, your participation is voluntary. You may choose not to participate or to withdraw your consent and discontinue participation at any time without penalty or loss of benefit. In signing this consent form, you are not waiving any legal claims, rights, or remedies. A copy of this consent form will be offered to you.

Your signature below indicates that you consent to participate in the above study.

Subject's Signature

Printed Name

Date

INVESTIGATOR'S STATEMENT

"I certify that I have explained to the above individual the nature and purpose, the potential benefits and possible risks associated with participation in this research study, have answered any questions that have been raised, and have witnessed the above signature. These elements of Informed Consent conform to the Assurance given by Arizona State University to the Office for Human Research Protections to protect the

rights of human subjects. I have provided (offered) the subject/participant a copy of this signed consent document."

Signature of Investigator _____

Date _____

APPENDIX I

LETTER OF ACKNOWLEDGEMENT OF SONG PURCHASE

Name of Student:

Dear Parent,

The purpose of this letter is to acknowledge that you and/or your child have legally
obtained the song

_____ by the artist _____

via purchase of an mp3 download or CD. Your signature on this form allows legal use of
this song in the band class project.

Date:

Signature of Student:

Signature of Parent/Guardian:

APPENDIX J

TRANSPOSITION CHART

Actual Pitch C Flute or Piccolo, Oboe Bassoon C Sop. Sax C Mel. Sax	Db Flute or Piccolo	Eng. Horn F Horn F Alto	Bb Sop Sax Bb Ten Sax Bb Bass Sax Bb Clarinet Bass Clar. Bb Cornet Bb Trumpet	Eb Alto Sax Eb Bar. Sax Eb Clarinet Eb Alto Clar.. Eb Alto Clar..	A Clarinet	D Horn	Trom-Bass Clef Bar.-Bass Clef Eb or BBb Tuba
G# (Ab)	G	D# (Eb)	A# (Bb)	F	B	F# (Gb)	G\$ (Ab)
A	G# (Ab)	E	B	F# (Gb)	C	G	A
A# (Bb)	A	F	C	G	C# (Db)	G# (Ab)	A# (Bb)
B	A# (Bb)	F# (Gb)	C# (Db)	G3 (Ab)	D	A	B
C	B	G	D	A	D# (Eb)	A# (Bb)	C
C# (Db)	C	G# (Ab)	D# (Eb)	A# (Bb)	E	B	C# (Db)
D	C# (Db)	A	E	B	F	C	D
D# (Eb)	D	A# (Bb)	F	C	F# (Gb)	C# (Db)	D# (Eb)
E	D# (Eb)	B	F# (Gb)	C# (Db)	G	D	E
F	E	C	G	D	G# (Ab)	D# (Eb)	F
F# (Gb)	F	C# (Db)	G# (Ab)	D# (Eb)	A	E	F# (Gb)
G	F# (Gb)	D	A	E	A# (Bb)	F	G
In BAND it is customary to tune to the Oboe's "Eb" or the Bb Clarinet's "C" (actual "Eb")							
In ORCHESTRA it is customary to tune to the Oboe's "A" or the Bb Clarinet's "B" (actual "A")							

EXAMPLE: If a Bassoon is playing in the key of "A", a Bb Trumpet would have to play in the key of "B" to match.

This transposition chart will help you "fit in" with other instruments. Select the key of the instrument you want to play along with, and the key of the song, and then move horizontally to the column which matches the key of your instrument. It will show you the matching key signature.

APPENDIX K
FEEDBACK FORMS

Comment sheet for pop tune

Nov. 23, 2011

Name of assessor:

Name of performing group:

Name of song:

One thing I like about their performance is (name at least one positive aspect. You can name more if you want):

One thing I think the group could improve upon is (name at least one area for improvement. You can name more if you want):

APPENDIX L

FINAL PERFORMANCE PROGRAM

The Students of the Murphy High School Symphonic Band Present:

**A Concert of
Popular Music**

December 7, 2011

Moves Like Jagger

Originally sung by Maroon 5
featuring Christina Aguilera

Tyson, euphonium
Erica, alto sax
Robbie, tuba
Heather, flute
Nathan, trumpet

Kids

Originally sung by MGMT

Whitney, alto saxophone
Justin, percussion
Tim, percussion
Alexis, clarinet
Tyler, clarinet

Revolution

Originally sung by the Beatles

Clayton, euphonium
Kayla, clarinet
Shannon, alto saxophone
Clayton, trumpet
Brittney, French horn

Mambo No. 5

Originally sung by Lou Bega

Dylan, percussion
Cliff, alto saxophone
Kelly, trumpet
John, French horn
Gregory, tenor saxophone

Lucky

Originally sung by Jason Mraz

and Colbie Caillat

Leslie, flute
Ashley, oboe
Tom, trumpet
Sarah, clarinet
Danielle, flute

Rollin' in the Deep

Originally sung by Adele

Rachel, bassoon
Haley, flute
Alyssa, flute
Tori, oboe
Emily, bass clarinet

That's How You Know

From the motion picture Enchanted,
originally sung by Amy Adams

Roxanna, flute
Jennie, euphonium
Kimberly, oboe
Wes, percussion
Janet, bass clarinet

Rikki Don't Lose that Number

Originally sung by Steely Dan

Jake, percussion
Cody, trumpet
Scott, trombone
Michael, baritone saxophone

Dynamite

Originally sung by Taio Cruz

Brian, tuba
Micah, percussion
James, trumpet
Russ, trumpet
Mark, trumpet