THE EFFECTS OF COLLABORATIVE REFLECTION
ON THE IMPROVISATION ACHIEVEMENT
OF SEVENTH AND EIGHTH GRADE INSTRUMENTAL MUSIC STUDENTS

A Dissertation in
Music Education
by
Nancy S. Beitler

© 2012 Nancy S. Beitler

Submitted in Partial Fulfillment
of the Requirements
for the Degree of

Doctor of Philosophy

August 2012
The dissertation of Nancy S. Beitler was reviewed and approved* by the following:

Linda C. Thornton  
Associate Professor of Music Education  
Dissertation Adviser  
Chair of Committee

Joanne Rutkowski  
Professor of Music Education

Eric J. McKee  
Associate Professor of Music Theory

P. Karen Murphy  
Professor of Education (Educational Psychology)

Joanne Rutkowski  
Professor of Music Education  
Chair of Graduate Program

*Signatures are on file in the Graduate School.
ABSTRACT

The purpose of this study was to investigate the effect of collaborative reflection among improviser, peers and teacher on the improvisation achievement of seventh and eighth grade instrumental music students. The investigation was guided by the following questions: 1) Is there a difference in students’ improvisation achievement scores when they participate in collaborative reflection during their improvisational experiences compared to when they do not participate in collaborative reflection? 2) Is there a difference between the students’ improvisation achievement scores based on grade, gender and instrument group? 3) What is the nature of the collaborative talk among improviser, his or her peers and the teacher?

The quasi-experimental repeated measure design included the Improvisation Achievement Measure (IAM), a researcher designed assessment tool. Each participant \((n = 44)\) received three treatments and completed four improvisation assessments over a 22-day period. The three treatment periods, each lasting six days, involved a rotation through the following: Treatment A – introductory improvisation instruction with no reflection, Treatment B – improvisation instruction with collaborative reflection and Treatment C – improvisation maintenance with no reflection. Presentation order of the treatment sessions differed for each group to control for order effect.

A three-way repeated measures analysis of variance was used to test the equality of means by comparing the multiple participant means over the four assessments. The results show a statistically significant difference for treatment on the students’ improvisation achievement, \(F(3,120) = 7.86, p < .001\) with an interaction between treatment x instrument group x grade. Further investigation revealed statistically significantly higher scores for the Woodwinds
between the Introductory and Collaborative sessions where as the Brass/Percussion revealed higher scores as a result of the Maintenance session.

The findings indicated that it appears possible to teach seventh and eighth grade instrumental music students to improvise within the confines of a school music program. The woodwind students’ improvisation achievement benefited from collaborative reflection opportunities while brass and percussionists were more strongly influenced by the repetition of skills experienced in maintenance type activities.

*Keywords:* improvisation, collaboration, reflective practice, instrumental music, adolescent
TABLE OF CONTENTS

LIST OF TABLES........................................................................................................................................... vii
LIST OF FIGURES ............................................................................................................................................. viii
ACKNOWLEDGEMENTS .................................................................................................................................... ix

CHAPTER 1:  Introduction to the Problem........................................................................................................ 1
  Improvisation .................................................................................................................................................... 3
  Adolescent Musician ................................................. 5
  Need for the Study ................................................. 7
  Statement of Purpose ........................................... 9
  Definition of Terms .................................................. 9

CHAPTER 2:  Review of Literature .................................................................................................................... 11
  Transmission versus Enculturation ............................. 11
  Teacher-driven versus Student-directed ...................... 14
  Individual Learner versus Community of Learners ........ 17
  Summary of the Literature on the Learning Environment for Creativity ........................................................ 21
  Collaboration .......................................................... 21
  Reflective Practice and Improvisation ......................... 23
  Improvisation Assessment ........................................ 25
  Summary of the Literature on Collaborative Reflection and Improvisation .......................... 27

CHAPTER 3:  Methodology ............................................................................................................................... 29
  Design ................................................................................................. 29
  Participants ....................................................................................... 30
  Role of the Researcher ................................................................. 32
  Setting and Curriculum .............................................................. 33
  Definition of Pedagogical and Design Terms .................. 34
  Treatment Sessions ........................................................................ 36
  Collaborative Reflection ............................................................. 41
  Development of the Improvisation Prompts .................... 43
  Development of the Assessment Measures ..................... 44
  Improvisation Criteria Worksheet ........................................ 45
  Improvisation Achievement Measure .............................. 46
  Pilot Study ....................................................................................... 46
  Data Collection for the Full Study ................................. 49
  Analysis of Data ............................................................................ 55
LIST OF TABLES

Table 3.1 With-in Subjects Repeated Measure Design ............................................................... 30
Table 3.2 Distribution of Recordings to the Judges ................................................................. 54
Table 4.1 Group Means and Standard Deviations for Treatment ........................................... 59
Table 4.2 Repeated Measures Analysis of Variance Within-Subjects Effects of Treatment .... 60
Table 4.3 Pairwise Comparisons of Treatment by Grade and Instrument Group Factors ........ 62
LIST OF FIGURES

Figure 3.1 Call and Echo Patterns: Cadential Emphasis ............................................................ 37

Figure 3.2 Call and Echo Patterns: Chordal, Melodic and Rhythmic Emphasis ...................... 39
ACKNOWLEDGEMENTS

A journey of this magnitude would not be possible without the guidance and support of many people. I am grateful for the treasured advice and support of my advisor, mentor and friend, Dr. Linda Thornton as well as the skilled guidance of my entire committee, Dr. Joanne Rutkowski, Dr. Eric McKee and Dr. Karen Murphy. A special thank you to Dr. Rutkowski for her encouragement and friendship that inspired me to view myself as a researcher.

For the expertise of valued music colleagues Scott Watson, Darrin Thornton, Nate Bonaveri and Peter Tantsits who assisted in perfecting the assessment tools, I am also very thankful. Acknowledgement as well for the assistance of colleagues Robert Brown, Ron DeGrandis, Rosemary Grube, Debra Heiney, Derek Rohaly and Jude Sandt for listening and evaluating 176 student recordings. I am also thankful to David Neimeyer for his editing skills and fresh perspective.

Finally, I am very grateful to my family, my mother and sisters for their constant encouragement and support. Most importantly for the unwavering sacrifice and patience of my husband Bill and our sons, Brant and Josh. I would not have completed this journey without their unending love and support.

Soli Deo gloria
CHAPTER 1

Introduction to the Problem

The 21st century adolescent learner requires cognitive skills embedded with creative and critical thinking. The ability to problem-solve through trial and error exploration, to think creatively and to communicate and collaborate effectively is a precious commodity in our innovative global community (Framework for 21st century learning, 2004; Robinson, 2001). Music improvisation supports the development of creative thinking and problem-solving skills (Webster, 2002) coveted by the 21st century educator.

Improvisation can also benefit overall musicianship. Authors of the National Standards for Arts Education (1994) encouraged the fostering of creative elements like improvisation and composition within music education. There is also evidence that improvisation and composition provide growth in children’s instrumental music performance ability (Azzara, 1993; Hall, 1992). Further, the personal music-making skills evidenced in improvisation and composition, it has been argued, completes the musician (Campbell, 2009; Lines, 2005; Perlmutter, 2010). No longer just performers or re-creators of others’ music, the young instrumental musician with refined skills in improvisation and composition becomes a creator of music. “[O]ne of the marks of a young independent musician is the ability to improvise skillfully” (Beegle, 2010, p. 219).

To prepare independent adolescent musicians – re-creators and creators of music – all instrumental music students should receive instruction in improvisation techniques. Although improvisation has been an essential part of jazz instruction for decades it is only recently that research provides insight into appropriate instructional strategies for teaching improvisation in the instrumental music setting (Herb, 2012; Pignato, 2010; Schopp, 2006). The development of specific instructional strategies for improvisation with instrumentalists includes such resources as
Azzara and Grunow’s book, *Developing Musicianship through Improvisation* (2006) with strategies based on Edwin E. Gordon’s music learning theory (2003); examples of specific strategies used in a middle school instrumental music program (Beitler & Thornton, 2010); and recommendations from high school band directors (Schopp, 2006).

The use of reflection and exploration within composition strategies is receiving significant attention from general music teachers (Miell & MacDonald, 2000; Morgan, Hargreaves, & Joiner, 2000; Robinson, Bell, & P gonowski, 2011). Likewise studio teachers, musicians and mentors from many styles and traditions have a long practice of reflective interaction with their students. Perhaps similar collaborative reflection techniques can encourage refined and skillful improvisations from instrumental music students within the school setting.

Collaboration is a strong tenet of 21st century learning (Framework for 21st century learning, 2004) and it is also fundamental for creative musical activities such as improvisation (Miell & MacDonald, 2000; Pignato, 2010; Sawyer, 1999). Collaborative reflection in improvisation takes two forms – musical conversation (exchanges that are purely performed) and verbal conversation (exchanges that are purely spoken). The musical conversation feeds the performance of the individual as well as the whole ensemble (Sawyer, 2008). The verbal conversation enhances future performances by validating and refining individual and ensemble improvisatory decisions.

According to Sawyer, instrumental music is typically an “ensemble art” (2008, p. 58) so performance “emerges from the interaction of the group” (2000, p. 182). The collaboration of the ensemble through musical conversation produces a perfected performance resulting from the blending of their musical sounds. Musical conversation offers independent, adolescent musicians the validation and encouragement of their peers as their musical ideas and motives are
copied and expanded within the improvised conversation. Many times a call and response opportunity results in the “collaborative emergence” (Sawyer, 2000, p. 182) – a performance that emerges from the interaction of a group.

The verbal conversation within the improvising group also plays an important role in the collaborative effects of the independent, adolescent musician. Words of encouragement and validation as well as clarification and modification may propel the improviser to a more skillful performance. Through interactive conversation, an improvisation can come to mean “something which was not generated within one mind, but, rather constructed between people” (Burnard, 2002, p. 168).

In addition, the collaborative experience appears to mean more when young musicians work in groups with friends. Adolescent improvisers who work in friend groups are more productive both in quality and quantity than when they work in teacher-assigned groups (Miell & MacDonald, 2000). Surprisingly within friend groups the verbal conversation contains little off-task talking and appears to refine the creative efforts of the entire group (Miell & MacDonald, 2000).

**Improvisation**

In this study improvisation was described as music created spontaneously within “specified music parameters” (Azzara, 2002, p. 171), based upon prior knowledge and experiences (Campbell & Teicher, 1997) and is unlikely to be exactly reproduced (Campbell & Teicher, 1997; Ferand, 1961; Kartomi, 1991; Mickolajak, 2003; Nettl, 1974; Perlmutter, 2010). This definition was derived from various existing definitions of improvisation. A group of instrumental music teacher educators at the Instrumental Music Teacher Educators (IMTE)
Colloquium worked together to define improvisation as “Un-notated music making in real time that draws from a repository of expressive gestures” (Beitler, 2007).

Three characteristics of improvisation are common in the literature. First, the apparently vital characteristic of spontaneity separates improvisation from all other creative music making. The ability to be spontaneous implies a “real time” experience that seemingly occurs from an extemporaneous or unplanned performance (Hickey, 2009). Secondly, the improviser brings to the performance all prior knowledge and musical experiences. Through past musical experiences the improviser has developed a vocabulary, a library, or a “repository” of sounds and musical ideas that may provide the language for new and spontaneous musical conservations (Beitler, 2007; Nettl, 1974).

Third and lastly the lack of notation, a frequently accepted sign of improvisation, presents the fleeing and temporary nature to improvisation. The absence of notation in itself, however, does not always guarantee an improvisatory work. Ethnomusicologist Bruno Nettl (1974) wrote about the music practices of various cultures that do not use notation. For example, the American Plains Indians may receive a song in a vision that once performed, though not written, becomes established as a composition – repeatable and stable. The Javanese gamelan musicians’ use of “degrees of independence” (p. 7) blurs the lines of improvisation and composition even further. A “notation system from which the improviser departs” (p. 2) is demonstrated by the Javanese musician’s departure from a fixed melody.

More recent clarification to the definition of improvisation includes the term play. Researchers of children’s spontaneous utterances such as Berger and Cooper (2003), Campbell (1998), Kartomi (1991), Lew and Campbell (2005) as well as the classic study by Moorehead and Pond (1978) explored the importance of musical play. Musical play can be described as the
uninhibited exploration of sound though generally not random but showing attention to structure (Pond, 1980). Children’s playground songs easily demonstrate play; however, this “playful approach” (Green, 2008, p. 59) to music-making can also be applied to the middle school setting. Play could provide middle school students the ability to freely explore musical sounds without the concerns of wrong notes and mistakes. Free improvisation provides the very same playfulness – a process of creativity (Hickey, 2010) – as basis for “concepts of creativity and expressive individuality that most closely aligns with the ‘free improvisation’ genre of current times” (Hickey, 2009).

Improvisation is the “common thread” that unites the music of the world. A connection to this “common thread” belongs in the middle school instrumental setting through playful exploration and improvisation both free and structured (Campbell & Teicher, 1997). However, improvisation is the most “widely practiced [sic] of music activities and the least …understood” (Bailey, 1992, p. ix). The present structure of American schools may make teaching improvisation a challenge but not impossible. Despite the decline of improvisation in the Western art music canon (Ferand, 1961; Moore, 1992), music educators are rediscovering the importance of creative music-making for all musicians – novice and professional. Middle school music educators can incorporate improvisation in curricula by looking to the expertise of musicians in the field exhibited by non-Western, jazz and popular musicians and the current trends in education demonstrated by the research on play and student-directed learning.

Adolescent Musician

According to Erikson (1997), adolescence – 12 to 18 years – is the fifth stage of human development. At this stage – identity versus role confusion – the individual seeks to be more independent. He or she will explore possibilities and begin to form his or her identity based upon
exploration. The adolescent will emerge with a firm sense of identity when provided with an
environment conducive to experimentation and exploration. During this time of discovery, the
adolescent will search to discover his or her identity, social relationships and morality (Erikson,
1997).

In the developmental stage before adolescence, school age – 6 to 11 years – children
work to achieve industry through technical competence (Erikson, 1997). They pursue realism in
their artistic endeavors. According to Duncum (1986), Howard Gardner adversely identified this
stage as a “loss of flavorfulness” (p. 44) and Lindstrom called it “aesthetic dormancy” (p. 43).
The alleged “U curve in artistic development” (Duncum, p. 43) appears to be a time of stylistic
and technical improvement, not as clearly imaginative and spontaneous as early childhood.
School age industry may provide the adolescent with the skills needed to return to playful
experimentation, a seemingly more creative stage.

Seventh and eighth graders (typically 12- and 13-year-olds) are at the threshold of
creative rebirth (Duncum, 1996). Their desire to experiment and explore translates to their
musical preferences and creations. The social tensions of acceptance by peers and affirmation
from teachers and parents cause an “epitome of generative tension” (Kaschub & Smith, 2009, p.
205).

According to Williamson (2000), four traits of the adolescent musician are “a desire for
peer acceptance, abundant energy, love of fun, and limited time-management skills” (p. 29).
These challenging traits can provide the impetus of exciting experiences in improvisation. Even
though overly concerned about peer acceptance, they will actively seek “…to create music that
fits into the experiences of their daily lives…” (Kaschub & Smith, 2009, p. 206).
Need for the Study

Improvisation pedagogy for instrumental music students outside of the jazz idiom has progressed slowly since the publication of the National Standards for Arts Education in 1994. According to the research database ERIC, only eight publications regarding improvisation were contributed in the decade of the 1960s. This number increased to 61 publications from 2000 to 2009; however, when the search is modified to include only instrumental music education and not jazz education the results are stark with one publication in the 1970s to an increase to five from 2000 to 2009 (ProQuest, 2011). The need for systematic study, both quantitative and qualitative in nature, investigating improvisational strategies and achievement involving instrumental music students is apparent.

Much of the research on instrumental improvisation focuses on the achievement of the individual’s performance abilities (Azzara, 1993; McPherson, 1993; Stringham, 2010). The traditional view where young musicians obtain performance skills for their personal achievement does not always account for the collaboration that takes place within the ensemble. According to Azzara (2002), “…improvisation study improves the music achievement of elementary instrumental music students and that with improvisation skills students can express their musical thoughts spontaneously” (p. 179). A focus on the achievement of an individual student’s improved improvisation abilities independent of their general performance abilities has not been studied as thoroughly.

Collaborative reflection experiences within the general music setting have been studied and verified as effective for music composition experiences (Miell & MacDonald, 2000; Morgan et al., 2000). Studies investigating collaborative experiences while improvising are also appearing in the general music setting (Beegle, 2010; Kanellopoulos, 2007). Application of
similar strategies in the instrumental music setting with improvisation experiences may possibly have the same results for instrumentalists.

The nature of collaboration requires group interaction. A group product is also typically the result of the compositional and improvisational experiences in general music settings. The present study investigated the use of collaborative reflection during the instructional sequence and its effect on the individual’s improvisation achievement not the quality of the product of the group as a whole.

The question as to whether it is possible to teach improvisation in the school setting has received attention (Hickey, 2009). It has been suggested that a clear focus on providing opportunities for students to experience improvisation – a process free of the restraints caused by an excessive focus on the product – may result in improved improvisation achievement. This study emphasized process-oriented strategies such as collaborative reflection, which may provide much-needed examples of successful instructional strategies and evidence of improvisation achievement.

In addition, the lack of an accepted pedagogy for improvisation outside of the jazz idiom appears to feed the scarcity of its application to school music programs. The National Standards suggest that all students should be improvisers, not just jazz students. Inexperience with improvisation techniques and uncertainty about appropriate instructional strategies many times cause educators to falter or even ignore improvisation entirely (Byo, 1999; Sarath, 2002; Strand, 2006). A clearer pedagogy may provide direction and guidance in educators’ search for clarity.

While the use of collaborative reflection within instructional strategies for improvisation may not provide a complete pedagogy, it is hoped that collaborative reflection, through both
musical and verbal interaction, may present a component to assist the profession in solidifying meaningful improvisation pedagogy.

**Statement of Purpose**

The purpose of this study was to investigate the effect of collaborative reflection among improviser, peers and teacher on the improvisation achievement of seventh and eighth grade instrumental music students. This investigation was guided by the following questions:

1. Is there a difference in the improvisation achievement scores of students when they participate in collaborative reflection during their improvisational experiences compared to when they do not participate in collaborative reflection?
2. Is there a difference between the improvisation achievement scores of students based on gender, grade and instrument group?
3. What is the nature of the collaborative talk between the improviser, his or her peers and the teacher?

**Definition of Terms**

The following terms used throughout the study are defined as follows:

**Adolescent.** An adolescent is an individual “developing from childhood to maturity; growing up” (Agnes, 2005) both physically as well as musically. The accepted range for adolescences is typically 12 to 18 years of age. Adolescence is a time of discovery – discovery in identity, social relationships and morality (Erikson, 1997).

**Collaborative reflection.** Collaborative reflection is defined as the ability of an individual to look back at his or her performance and learning not just through self-reflection but also with the thoughts and reactions of his or her peers and mentors in the hope of producing a refined and improved performance (Beitler, 2011).
**Improvisation.** Improvisation is described at its very basic level as music created spontaneously within “specified musical parameters” (Azzara, 2002, p. 171) and is unlikely to be exactly reproduced (Azzara, 1993; Campbell & Teicher, 1997; Ferand, 1961; Kartomi, 1991; Mickolajak, 2003; Nettl, 1974; Perlmutter, 2010). The performer brings to the performance all prior knowledge and experiences to the production of the new work.

**Improvisation achievement.** Successful achievement in improvisation is the result of a student’s use of honed performance skills with well-developed creative adeptness to produce an original spontaneous musical work.
CHAPTER 2

Review of Literature

The practices of improvising musicians and observant educator researchers offer cues that can inform the improvisational teaching strategies of the middle school instrumental music teacher. Three components demarcate the scope of discussion regarding improvisation in the instrumental music setting. The three components within improvisation pedagogy addressed here are: (a) transmission versus enculturation factors, (b) teacher-driven versus student-directed learning and (c) individual learner versus a community of learners. Recent literature on collaboration, reflective practices and improvisation assessment may also provide justification for the use of improvisation as an integral element in the development of creative musicians. The process of nurturing the adolescent through playful experiences may foster growth in the complete and independent musician.

Transmission versus Enculturation

One accepted model for the full-time job of an educator is the transmission of knowledge, the sharing with students what is known about a subject through lecture, discussion and demonstration. The student’s responsibility, in this model, is to accept and store this information and hopefully apply it. In a scholarly article, Tishman, Jay and Perkins (1993) reached beyond mere direct instruction to encourage the educator to think about teaching for “good thinking dispositions” (p. 147) – thinking creatively and critically. These researchers presented a list of seven dispositions that contribute to good thinking: (a) “to be broad and adventurous” – open-minded, (b) “to sustain intellectual curiosity” – find problems, (c) “to clarify and seek understanding,” (d) “to be planful and strategic” – set goals, (e) “to be intellectually careful” – precise, (f) “to seek and evaluate reasons” – question, and (g) “to be metacognitive” – reflective
Educators should cultivate these dispositions to encourage good thinking from their students.

According to Tishman et al. (1993), these dispositions are key to a student’s critical thinking. The authors argued the best way to nurture the key dispositions is to clarify the differences between teaching as transmission and teaching as enculturation. In the transmission model “[t]he teacher’s role is to prepare and transmit information to the learner. The learners’ role is to receive, store, and act on this information” (p. 149). Teaching as transmission is most effective when teaching facts and mechanized skills such as the fingering of a note on the staff. The enculturation model, however, is designed to inspire and challenge students to broaden their thinking for activities such as improvisation. In the enculturation model educators need to link the student’s activities to a context – a “culture of thinking.” This culture can be established in the classroom by including “cultural exemplars, cultural interactions and direct instruction in cultural knowledge and activities” (p. 150). In the instrumental music setting, a “culture of thinking” for improvisation necessitates a teacher exemplar modeling the creation of music spontaneously. The teacher and students interact in a community of music-making free for exploration without fear of mistakes and wrong notes. This environment is enhanced with opportunities to reflect and collaborate about the sounds that work and those that need refinement.

Creating the “culture of thinking” advocated by Tishman et al. (1993) is not easy for educators who have limited personal training in this culture. Perlmutter (2010) in a practitioner journal article provided teachers with ideas for the novice instrumental teacher/improviser as well as those in the vocal and general setting. According to Perlmutter, lessons presented by teachers in the field provide insight and strategies for the application of improvisation.
Assessment and peer listening are two valuable components also discussed by Perlmutter. Students are able to demonstrate their understanding of musical concepts and skills by applying them to their improvisations. Through the student’s improvisation, the teacher receives a clear picture of what the student has grasped and what skills she or he still needs to review and refine. Many of the lesson ideas presented by Perlmutter encourage the performance of student improvisations within an ensemble or group setting. Students “learn to listen to what everyone has to say” (p. 33) both verbally as well as musically. Although concentrating largely on structured activities, Perlmutter also offers some strategies for free improvisation.

Enculturation, in addition to the use described by Tishman, et al. (1993), is also a central factor in most music traditions outside of Western art music. Children are exposed to music in their homes, on the playground, and in their community. They absorb musical sounds by hearing the world around them, the same way as they experience their spoken language. From this immersion, they develop their musical vocabulary (Campbell & Teicher, 1997; Green, 2008; Tishman, et al., 1993). Unfortunately, our children experience a conflict in cultures; American school music is many times not the same as family or community music. Perhaps American music teachers need to be aware of this conflict in order to establish and nurture the culture of their school’s philosophy and curriculum – school culture.

Campbell (2009) further explained that socialization and enculturation combine with specific training to result in refined improvisation. Improvisation appears to come from “nothing;” however, it requires “conscious as well as unconscious selection from a reservoir of musical sound expressions that have been acquired over time” (p. 121). According to Campbell, these expressions are acquired from the experiences in the culture through imitation and repetition, through frequent verbal and musical dialogue from teacher to student as well as
student to peers, and through immersion in the performances of expert musicians. This training will also require an understanding of the traditions and structures of the culture generally built on appropriate phrase units; these are known as “building blocks” (Nettl, 1974), motives or riffs.

Admittedly it would seem the culture of many American school music programs is to maintain the Western art music traditions. Band, choir and orchestra programs are a genus of their own, steeped in the Western culture. Still Campbell (2009) encouraged the teacher to understand that it is “human to improvise” (p. 139). If the teachers learn to incorporate improvisation into the school culture, students will “develop a deeper and more comprehensive musical understanding” (p. 139) and likely become more expressive musicians.

**Teacher-driven versus Student-directed**

Music classrooms and even rehearsal halls with the teacher in front of a group of students, driving the learning, might no longer be considered a healthy option for a learning environment (Green, 2008; Wiggins, 1999). Giving students the ability to make decisions within a well-organized lesson will nearly eliminate the unpleasant discipline behaviors of the middle school setting (Miell & MacDonald, 2000).

The first step toward nurturing the student-directed classroom or rehearsal hall is acknowledgement of the musical understandings children bring to the classroom from past school experiences and from living within a community (Campbell, 2009). Based on her experience, Wiggins (1999) presented composition strategies for enabling students to be self-directed and, consequently, free to create. When designing creative activities she suggested: (a) choose one parameter – a broad overarching idea – for the project, (b) choose genuine opportunities – not just fill in the blank or juggle the phrases, (c) do not require notation – this can limit creative choices, (d) use a simple explanation for the assignment – extra details may
cause students to try to please the teacher instead of themselves, (e) celebrate their finished product – even if they strayed from the original parameter, and (f) stay out of the way – be available if the students ask for help, otherwise, do not interfere with their creative process. The student will be able to share what they already know about music when a project is designed in this way. The teacher can then identify what the student does not know and plan the next instructional strategy. Students can genuinely surprise a teacher with their creativity when they are given autonomy. The design for composition suggested by Wiggins (1999) might be transferred to improvisational strategies.

One example of a student-directed music program is Musical Futures – a national music education program in England – directed by Lucy Green and assisted by Abigail Walmsley (Green & Walmsley, 2006). This program is an outgrowth of research on the informal learning practices of popular musicians (Green, 2002). A large part of Green’s work (Green, 2008) includes discussion of learner autonomy – student-directed learning. Discussion of autonomy – a student’s inclination to determine one’s own action – has been part of educational philosophy for 30 years. Green, however, refers to “circumstantial autonomy” in her study; students are “allowed” independence of action as a means to education (p. 103).

In the first stage of Green’s (2008) study, 13- to 14-year old students chose a small group of friends with whom they will work to produce an arrangement of a song of their choice. The individual students bring examples of music to the group. After listening to the examples, the group chooses one song. They select instruments from those made available by the teacher, anything from traditional classroom or orchestral to rock instruments. The students then “attempt to copy the recording by ear, directing their own learning” (Green, 2008, Appendix B).
The teacher is available for guidance and modeling when the students request it; otherwise the teacher acts as facilitator and enthusiast.

Out of 40 groups in the Green (2008) study, each working through seven projects, the overwhelming majority of the students found arranging a familiar song a successful and enjoyable experience. “Being granted autonomy was seen by learners to enhance their sense of personal responsibility and conscious awareness of how to improve their own learning…” (Green, 2008, p. 107).

Reggio Emilia schools are another example of a student-directed education program. Siegrist (2010) is a music teacher in a large urban elementary school in Canada. In a conference presentation Siegrist shared how she applies the principles of the Reggio Emilia, a philosophy founded in a small city in Northern Italy. Siegrist explained that each child is unique and a protagonist of his or her growth; the teacher accompanies the child along the journey. The teacher’s role is to document the child’s learning in order to communicate the student’s growth and understanding. Documentation takes numerous forms, such as a transcription of student conversations and quotes, photographs, audio and video recordings and artifacts of student work. Teacher reflections accompany the documentation providing the teacher’s perception of the child’s learning and how it connects to other facets of the child’s experience. The teacher, to assist in making informed curricular choices as well as assessing student understanding and growth, then interprets these documents. Music and all of the other disciplines are so entwined that they are not seen as separate but all working towards solving a problem or question identified by the child. This is truly a student-directed environment (Siegrist, 2010).
It may not be possible to apply the entire Reggio Emilia approach to the middle school instrumental music setting. Middle school students, however, could surely thrive in a learning environment that would provide autonomy for students’ musical ideas and aspirations.

**Individual Learner versus Community of Learners**

Reflection and critiques are vital components in the creative process. Adolescent improvisers, as well as composers, benefit from continuous and frequent comments and critiques from teachers and their peers (Green, 2008; Hamilton, 1998; Morgan, Hargreaves, & Joiner, 2000). A “community of learners” (Younker, 2003) requires an interaction between all members of the learning environment – teacher to student, student to teacher and between students.

Reese (2003), in a practitioner publication, provided guidance and suggestions for effectively responding to student compositions. He included lessons *for* the young and inexperienced teacher and lessons *from* the experienced and expert teacher. Also included is a continuum of sample responses from least to most directive, all equally applicable to responding to students’ improvisations. Teacher feedback needs to be encouraging and positive; however, totally avoiding instructive and corrective comments will not benefit students. Reese advised comments need to clearly identify what is working and what needs to be revised and why.

Individual teacher feedback is helpful for students; however, peer critiques receive far more attention from adolescent students than their teachers’ remarks (Reynolds, 2009). Creating a non-threatening classroom environment will encourage students to be sensitive to their improvising peers as they learn from their “mistakes and triumphs” (p. 56). A teacher model of appropriate responses and comments can guide the student’s critiques. Teachers who graciously accept feedback from their students will encourage students to do the same. This learning environment, as described by Younker (2003) in a practitioner publication will also improve
critical thinking skills in preparation for the reality of the critiques students will experience in the workforce. While individual reflections and critiques are beneficial, working in a supportive community of learners will double the reflective benefits (Younker, 2003).

The Music Composition Online Mentoring Program (Music-COMP), formerly known as the Vermont MIDI Project, is a model of a community of learners. Intact music classes are divided into composing groups of two or three students. Guided critique sessions are used to provide an opportunity for students to share their work in preparation for posting it on the Music-COMP website. Professional composers and teachers then provide feedback to the students via the website as the student’s work-in-progress continues. This model presented as an online resource purports some important tenets such as: (a) teachers and peers as well as professional composers provide critiques, (b) reflection and critique is done frequently, (c) students are encouraged to revise their work, and (d) a non-threatening, supportive environment is provided (Key tenets about the composition process, 2004).

Collaborative strategies immediately lend themselves to a sense of community particularly when presented appropriately by the teacher. The Morgan, Hargreaves and Joiner (2000) report presented the results of three separate studies that explored the importance of verbal and musical interaction within groups of 9- and 11-year old students during three different types of compositional activities. In these studies they sought to identify the relationship between peer interaction – verbal and musical – and group productivity. Musical discourse – “discourse through music rather than discourse about music” (p. 53) – may make a unique contribution to collaboration. For analysis, the total talk – verbal interaction – time was divided into four categories: (a) task-directed talk, (b) time spent reading an assigned narrative, (c) off-
task talk, and (d) interaction with the researcher. Similarly, the total time playing an instrument—musical interaction—had two categories: task-directed play and exploratory play.

The relationship between musical interaction—task-directed play—and the quality of the resulting musical compositions was significant and positive in all three of these research studies (Morgan et al., 2000). The amount of verbal interaction—task-directed talk—was different for each of three compositional activities. Further research is needed to identify whether this was a result of the nature of the task or due to differences between the three schools where data were collected. The significance of this report for the music educator is an awareness of the importance of musical interaction in peer collaborations. Mills was cited as saying, “[M]usic has its own meaning, not all of which can be expressed in words” (Morgan et al., 2000, p. 53). Educators need to model this interaction for their students to encourage its application in peer collaborations for both compositional and improvisational activities.

Musical interaction between adolescent peers is common within their popular music groups. School instrumental music programs; however, seem to rarely use this type of collaborative experience. An individualist method is more typical in instrumental music; a mission to “increase the skills and abilities of the individual students, even though most performance genres are ensembles…” (Sawyer, 1999, p. 202). Group improvisation provides opportunities for the development of beneficial musical skills as well as social skills. Sawyer in a scholarly journal reported the interactions that are naturally associated with improvisation as a chance to develop abilities in collaborative problem-solving, in communication of “ideas in the context of an evolving group discussion” (p. 203), in critical thinking, and analytical listening.

Organizing groups for collaborative work can be a daunting task. Teachers tend to approach the task from one of two views: grouping students for optimum results in product or
grouping students to benefit from the collaborative process. Miell and MacDonald’s study (2000) suggested that students will benefit in both ways when choosing their own “friend” groups. A concern for off-task talking and distractibility prompts teachers to shy away from this configuration. “…[M]usic is a key factor in determining and characterizing friendship for young people” (MacDonald & Miell, 2000, p. 60); using social relationships when organizing groups is justified. The researchers expected more communication between friends due to their prior history of friendship. Factors such as a history of shared experiences, a shared conception of the problem, an emotional investment in each other and an ease of establishing productive joint work activities may contribute to their interaction. In their study of 11- to 12-year olds, the researchers found that friendship groups were more successful than non-friend groups.

Miell and MacDonald (2000) used evidence of transactive communication to analyze the data collected from the video recordings of the group’s interactions during the task. “[A]mounts of explanations, justifications, clarifications, resolved conflicts and elaborations of ideas produced by children working together characterize transactive verbal communication” (p. 349). The mutual engagement occurring during these interactions typically resulted in greater success for the collaborative group. Similar to the Morgan et al. (2000) study, Miell and MacDonald also considered the musical communication between children by developing an analysis scheme based on the musical motives – transactive musical communication – produced by the children during interactions. It was found that friend groups produced more talk and more music. Their compositions were rated as being significantly better than non-friend groups. Even though friends did talk more than non-friends, the majority of children had no off-task talk at all. While assumptions cannot be made that these results would transfer to improvisational tasks, the
evidence certainly warrants attempts to apply friend groups to collaborative improvisation experiences.

**Summary of the Literature on a Learning Environment for Creativity**

By creating a culture of thinking (Tishman et al, 1993) where students are encouraged to explore, imitate, extend, absorb and dialogue we may provide an environment where the enculturation model (Campbell, 2009) of teaching is possible. Improvisation achievement may improve as students experience music examples from their teacher and expert models and receive inspiration to apply past musical experiences to their own music creations.

By encouraging student autonomy where young improvisers are given freedom within the creative process (Green, 2008; Wiggins, 1999), the educator may nurture an environment conducive for the creation of unique and interesting student improvisations. Student-directed learning stimulates the growth of the young musician and “enhances their sense of personal responsibility” for their own learning (Green, 2008, p. 107).

By developing a community of learners that includes the teacher as learner and student as teacher, we may provide a way for a “playful approach” (Green, 2008, p. 59) to music-making that can possibly complete the musician. The interaction between all of the members of the learning environment, one that also makes use of professional musicians and community members may be beneficial. Miell & MacDonald (2000) found the collaboration of the adolescents’ peers particularly fruitful.

**Collaboration**

Collaboration between learners was described by Murphy (2000) as “children actively communicating and working together, talking and sharing cognitive resources to establish joint goals and referents, to make joint decisions, to solve emerging problems, to generate and modify
solutions and to evaluate outcomes through dialogue and action” (p. 139). Collaboration requires communicating and working as a unified group. Beegle (2010) examined and described the interactions of 16 fifth grade students as they improvised in 4-person groups for 12 weeks during their general music class. The students planned and performed music improvisations based on three different prompts: (a) a poem – *Who Has Seen the Wind* by Rossetti (b) a painting – *The Escape Ladder* by Miró and (c) a musical composition – *Toccata for Percussion* by Chavez.

Beegle found that all four groups used a similar planning process and three specific strategies for performance – memorization, imitation and motivic development; however, they all produced different products. As a result of participating in the small-group improvisations, the children “gained skill in listening and performing in ensemble, communicating, group problem solving, decision making, and sharing improvisational techniques and musical ideas with one another” (p. 235). Beegle’s experience of finding a “balance between freedom of choice and useful constraints” (p. 235) was similar to Sawyer’s (2006) statement that structure and improvisation – freedom – are always present in group creativity.

According to Sawyer’s scholarship (2008), the balance between structure and freedom in a group improvisation provides scaffolds for different learning styles and developmental levels. Effective scaffolding built on structure and freedom also encourages meaningful participation that “naturally propels the child to increasing appropriation, mastery and central participation” (p. 57). Sharing the cognitive resources available within a group setting supplies the individual as well as the group with the means to form a common bond. Sawyer said, “Group improvisation is one of the purest examples of human collaboration” (p. 50).
Miell and Littleton (2008) observed five adolescent members of a student-led band as they prepared for an up-coming gig. Eighteen hours of video recorded rehearsals showed the members practicing pre-composed material as well as developing new material collaboratively. The purpose of the study was to explore how the band members collaboratively evaluated and developed their compositions. The interaction between the band members was continuous as they worked together to evaluate and appraise their music output. A complex transactional process of (a) playing and replaying sections and songs, (b) voicing opinions of what was working followed by offers of ideas for improvement and (c) demonstrating alternative versions for improvement was the norm for a typical rehearsal.

Unlike a typical group within a school setting, the band members were very frank and critical in their assessments. The interaction between members was “oriented towards achieving agreement and consensus concerning the ‘sound;’” however, it was “highly emotive and even confrontational” (p. 45). This kind of confrontation in a school setting could result in the group breaking down however it was not true for this group. Possible explanations may be the strong collective commitment to playing well and their long established friendship. “The relationship provides a safe context within which to play out ‘lethal confrontations’ creatively” (p. 46). Collaboration does not always mean cooperation; in fact, collaboration in the rock group setting many times results in tension and subsequent negotiation. While Miell and Littleton did not suggest school lessons should become like rock band rehearsals, formal school groups may benefit from exposure to a range of varied contexts within which to create music.

**Reflective Practice and Improvisation**

The creative process naturally includes reflection (Burnard, 2002; Kanellopoulos, 2007; Kushner, 2006). Creative thinking involves the ability to reflect back to previous art experiences
and even life experiences to edit the present or enhance the next creation. Kanellopoulos (2007) suggested that the “study of talk as an integral part of children’s creative process” (p. 125) is important in identifying the creation of meaning. Burnard (2002) proposed that “children experience thought as a function of action” (p. 169) implying that the process of improvisation includes the thought or reflection upon that action. In a study of a group of 12-year-old students, Burnard found that group improvisation “provides opportunities for children to confer meaning on their creativity” (p. 169) and interact musically. Eighteen children participated in the “Soundings Club,” a weekly lunchtime activity, where the students were encouraged to improvise and “reflect on the music-making context” (p. 159). The participants provided many rich reflective conversations recorded through the use of video observation and focus group interviews. Burnard found that musical interaction allows for a “flow of influence” (p. 169) between players and that reflection after performances reconstructs the experience, giving meaning to their creativity.

Kanellopoulos (2007) gathered the reflections of 8-year-old children through interviews as they discussed their free improvisation experiences. Kanellopoulos presented examples of the children’s reflections and then provided possible interpretations of the content and the philosophical significance of their thinking. One reflective scenario was built around the question, “Can an improvisation be played again?” (p. 134). The children supplied opposing views: “No, because every piece is unique” and “Yes, because the melodies that were played [in one piece] can be played again [in another improvisation]” and “…this was taken over, it was stolen by other children, so it was played again” (p.134). Kanellopoulos deduced that the children identified that every improvisation is unique but relies on a “common stock of ideas” (p. 134) that copies the “general idea of a pattern” (p.134) from others. In conclusion,
Kanellopoulos proposed that children “forge their thinking” (p. 136) by reflecting through dialogue about music and its making, saturating the discussion with their own ideas and intentions.

Kushner (2006) suggested that reflective practice is based on interaction and the “mutual exploration of lives” (p. 13), particularly in the collaboration of adolescents. Kushner reminded educators that they are not educating their students to become artists but “employing the arts to help young people engage with life” (p. 13). Reflective practice means for many educators the individual and private act of journal writing. This may be a result of the reflective practice strategies encouraged in teacher education programs. Once in the profession, teachers many times feel they do not have the space or time to reflect. Kushner reminded us that young people reflect collaboratively and “vigorously”; consequently, the teacher and the adolescent are “out of reflective ‘synch’” (p. 13).

To apply Kushner’s analysis of reflective action to curriculum and instruction the educator needs to think in terms of (a) lives, not standards; (b) experiments, not orthodoxies; (c) event-histories, not outcomes; (d) judgments, not appreciation; (e) conversation, not demonstration; and (f) wholes, not parts. Reflection is happening in the classroom, in the hallways, in the lives of students long before the teacher witnesses the evidence in the teaching process. “It is the stuff of adolescence, in particular” (p. 14).

**Improvisation Assessment**

Accurate measurement of improvisation skills has been a source of interest to researchers. The skills and abilities of instrumental music students outside of the jazz idiom has been the goal of researchers such as Azzara (1993), McPherson (1993) and Stringham (2010).
Use of well-defined criteria is also seen in jazz improvisation studies (Burnsed, 1978; Horowitz, 1994; May, 2003; Pfenninger, 1990; Smith, 2009).

Brophy (2000), in his book on assessing children’s music development, encouraged the general music teacher to identify appropriate “assessable components” (p. 158) when evaluating children’s music-making. Determining what is important to assess is essential in the process of developing a valid assessment tool. Likewise, attention to the dimensions of improvised performances is fundamental for effective evaluation of instrumental music students’ improvisations. When examining the improvised melodies of 6- through 12-year-olds general music students, Brophy (2002) developed a point system similar to a rubric assessing three dimensions: (a) melodic, (b) rhythmic and (c) structural. The two judges’ scores resulted in high inter-judge reliability with a Pearson correlation coefficient of $r = 0.98$.

Pfenninger (1990) and Azzara (1993) developed rating scales based on three dimensions similar to those of Brophy – tonal, rhythmic and expression. Six judges evaluated 20 university jazz students using a rating scale developed by Pfenninger (1990) for his dissertation study. Pfenninger’s tonal and rhythmic dimensions used a 5-point continuous scale whereas the expression dimension contained an additive scale of 5 possible points. A composite inter-judge reliability ranged from 0.67 to 0.79. The tonal and rhythmic rating scales were found to be valid for improvisation assessment; however, the expression additive scale appeared to be “heavily influenced by subjectivity” (p. 44).

Azzara’s (1993) three dimension rating scale – tonal, rhythmic and expression – also used continuous scales for tonal and rhythmic dimensions and an additive scale for expression. Four judges evaluated 66 fifth-graders’ performances in the hopes of identifying whether an emphasis on improvisation during instrumental music instruction had influence on students’ music
achievement. The overall inter-judge reliability was 0.94 indicating a high correlation of the scores between the four judges. The results indicated that an emphasis on improvisation during instrumental music instruction contributes to the music achievement of fifth-grade instrumental music students.

Partchey (1973) developed a method of evaluating melodic improvisation for his study involving 90 sixth grade general music students in a pretest/posttest design. The study investigated the effects of feedback, models and repetition on the students’ ability to improvise melodies. Three judges evaluated 180 tape-recorded improvised melodies using a 9-point rating scale based on the two dimensions, performance and creativity. The combined inter-judge reliability for the two dimensions was 0.94 for the pretest and 0.95 for the posttest. The pretest/posttest group means resulted in a statistically significant increase; however, the mean scores of within versus between subjects’ data revealed no statistically significant difference for instruction with feedback, models or repetition.

Attention to two vital dimensions of improvisation – performance skills and creative development – is evident in many of these studies. Performance skills are the needed referents or skill bases on which the performer created spontaneous musical pieces. Creative development is the process by which the performer takes these skills and arranges them in novel and imaginative ways (Berkowitz, 2010; Pressing, 1988).

**Summary of the Literature on Collaborative Reflection and Improvisation**

Collaboration requires the ability to communicate and work together for a common goal. Through dialogue and action a unified, and occasionally confrontational, group creates a product from the combined musical thoughts and ideas of the individual group members. Improvisation requires thought and reflection upon the action of music-making. Reflection upon previous
musical experience fuels the creation of the next. Assessment of improvisation requires the identification of appropriate evaluative criteria or dimensions. An educator’s use of appropriate evaluative dimensions provides clear goals for the final creative product.

Improvisational activities provide opportunities for musical growth beyond the traditional standards of a quality middle school instrumental music program. The fore-mentioned literature challenges us to reach outside the traditions and pursue the independent adolescent musician where a performing musician is also a creating one.

If young instrumental music students are given an opportunity to perform and reflect within an environment where they are immersed in a culture of music thinking and performing, an environment that encourages autonomy and a community of learners, will their improvisation achievement improve? Will the application of collaboration and appropriate assessment enhance the improvisations of middle school music students? Do adolescent improvisers’ gender or choice of instrument affect their ability to improvise? Finally, how do adolescent improvisers’ interact and reflect within the community of musicians and learners? This study sought insight into these questions.
CHAPTER 3

Methodology

The purpose of this study was to investigate the effect of collaborative reflection among improviser, peers and teacher on the improvisation achievement of seventh and eighth grade instrumental music students. This investigation was guided by the following questions:

1. Is there a difference in the improvisation achievement scores of students when they participate in collaborative reflection during their improvisational experiences compared to when they do not participate in collaborative reflection?

2. Is there a difference between the improvisation achievement scores of students based on grade, gender and instrument group?

3. What is the nature of the collaborative talk among the improviser, his or her peers and the teacher?

Design

A quasi-experimental repeated measure design was used to explore differences due to the independent variables of collaborative reflection, grade, gender, and instrument group on the dependent variable – improvisation achievement. The *Improvisation Achievement Measure* (IAM) was administered to all participants at the beginning of the study and after each of the three treatment periods (see Table 3.1). The three treatment sessions – A, B and C – included different instructional strategies and the use of collaborative reflection or the absence of collaborative reflection (see pp. 36 - 41 for detailed descriptions). The resultant scores from the IAM served as the measure of the participant’s improvisation achievement – the dependent variable.
The IAM included the assessment of the participants’ improvisation achievement level through the evaluation of his or her performance of a digitally recorded improvised phrase. The phrase was assessed for achievement in performance skills and creative development.

Table 3.1

*With-in Subjects Repeated Measure Design.*

<table>
<thead>
<tr>
<th>Instruction Groups</th>
<th>IAM</th>
<th>Treatment Period #1</th>
<th>IAM</th>
<th>Treatment Period #2</th>
<th>IAM</th>
<th>Treatment Period #3</th>
<th>IAM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seventh Grade Woodwinds</td>
<td>X</td>
<td>Treatment A Introductory improvisation instruction with no reflection</td>
<td>X</td>
<td>Treatment B Improvisation instruction with collaborative reflection</td>
<td>X</td>
<td>Treatment C Improvisation maintenance with no reflection</td>
<td>X</td>
</tr>
<tr>
<td>Seventh Grade Brass &amp; Percussion</td>
<td>X</td>
<td>Treatment A Introductory improvisation instruction with no reflection</td>
<td>X</td>
<td>Treatment C Improvisation maintenance with no reflection</td>
<td>X</td>
<td>Treatment B Improvisation instruction with collaborative reflection</td>
<td>X</td>
</tr>
<tr>
<td>Eighth Grade Woodwinds</td>
<td>X</td>
<td>Treatment A Introductory improvisation instruction with no reflection</td>
<td>X</td>
<td>Treatment C Improvisation maintenance with no reflection</td>
<td>X</td>
<td>Treatment B Improvisation instruction with collaborative reflection</td>
<td>X</td>
</tr>
<tr>
<td>Eighth Grade Brass &amp; Percussion</td>
<td>X</td>
<td>Treatment A Introductory improvisation instruction with no reflection</td>
<td>X</td>
<td>Treatment C Improvisation maintenance with no reflection</td>
<td>X</td>
<td>Treatment B Improvisation instruction with collaborative reflection</td>
<td>X</td>
</tr>
</tbody>
</table>

*Note.* See pp. 32 - 36 for detailed descriptions of the instructional strategies used during treatment sessions A, B and C.

Participants

The participants in this study were seventh and eighth grade instrumental music students in a suburban middle school (enrollment = 494) in eastern Pennsylvania. According to the Pennsylvania Department of Education Public School Enrollment Reports (2010-2011), a
majority (88.66%) of the school’s population was Caucasian with 4.83% Asian and 4.41% Hispanic. The African American population was “too small to disclose due to confidentiality” (LEA and Race). The population was 53.24% male and 46.76% female with 243 seventh graders and 251 eighth graders. Fifty-four students (10.93%) received free or reduced lunch (Pennsylvania Department of Education, October, 2010). The school district has a very stable population therefore the above figures were expected to remain comparable in the following school year when the present study was conducted.

The students who participated in the study ($n = 44$) had either three or four years of playing experience on their wind or percussion instrument. The eighth grade students had received a full year of middle school instruction in the previous year; the seventh graders were beginning their middle school experience. Most students started instrumental music instruction in fourth grade at the school district’s intermediate school which houses fourth through sixth grade students. The first three years of instruction at the intermediate school included the typical beginning level goals found in band method books such as tone production, note and symbol reading, performance technique and basic song literature. These students do not receive composition or improvisation instruction as part of their intermediate school instruction.

The middle school band students ranged in age from 12 years to 13 years 11 months. Band students received two 36-day mini band courses a year (August through October then again from the end of December through February) where they met daily in grade and instrument family assigned class – seventh grade woodwinds, seventh grade brass and percussion together, eighth grade woodwinds, eighth grade brass and a separate eighth grade percussion class. The students met every day for 36 days for 42 to 50 minutes a day depending on the day of the week.
The students also participated in Concert Band rehearsals once every six school days throughout the school year.

**Sampling procedures.** The population for this study consisted of seventh and eighth grade instrumental music students ($N = 62$) who play wind and percussion instruments in an eastern Pennsylvania middle school. Non-probability convenience sampling was used to identify all band students willing to participate in the study. All of the 62 instrumental music students with three or four years of experience on their instrument were invited to participate. They received a verbal invitation (see Appendix A) and the appropriate assent/consent forms (see Appendix B) for participation in the study. Through self-selection the sample size was 45. One student was unable to complete all phases of the study, so the final study population was 44 students.

Participants were assigned to lesson groups by the dictates of the school scheduling design as follows: (a) seventh grade woodwinds, (b) seventh grade brass and percussion together, (c) eighth grade woodwinds, (d) eighth grade brass and (e) eighth grade percussion. Each lesson group was then assigned to treatment groups in order to achieve a balance by grade and instrument family. The convenience sampling resulted in the following groups: seventh grade woodwinds ($n = 8$), seventh grade brass/percussion class ($n = 14$), eighth grade woodwind class ($n = 13$) and eighth grade brass/percussion ($n = 10$).

**Role of the Researcher**

The researcher in this study was also the regular instructor of the participants. The teacher/researcher continued to deliver the instructional strategies for all of the treatment sessions. The strategies used were part of the approved music curriculum and have been in use in the school for the past three years. As a collaborator in the collaborative reflection sessions,
the researcher maintained a state of instructional normalcy with the student improviser and his or her peers. Since this was the regular routine for the teacher and students, researcher bias did not appear to be a concern (Adler & Adler, 1987).

**Setting and Curriculum**

The curriculum for middle school band included performance techniques, comprehensive musicianship strategies and standards-based instruction including composition and improvisation. Within the school year, all students completed one composition and participated in numerous improvisational activities. As part of the normal instrumental music program, improvisation instruction started in seventh grade. Consequently, the seventh grade students received their first experiences with improvisation at the beginning of this study. The eighth grade students had a full year of instruction in improvisational strategies in both their seventh grade band mini-course and during band rehearsals from the previous school year.

The typical instructional strategies for improvisation experienced by the eighth graders in their previous school year consisted of call and echo as well as call and response activities both sung by the student and played on their instrument. A final assessment of the students’ improvisation abilities was a normal part of the classroom procedures for improvisation instruction. The assessment activity required each student to provide an appropriate solo response to the teacher’s call or prompt to inform the student and the teacher of their strengths and areas of challenge. For those who were uncomfortable improvising in front of their peers, opportunities to play for the teacher only were offered.

The improvisation instruction used during this study was part of the normal instrumental music curriculum and continued the prior practice where improvisation was an integral part of
the middle school instrumental music program. All participants received instruction from the
teacher/researcher who was the regular instrumental music teacher.

**Definition of Pedagogical and Design Terms**

The pedagogical and design terms used throughout the methodology chapter are
described as follows:

**Call and echo.** The teacher began all call and echo activities by establishing a steady
beat and a starting pitch. The teacher or leader played a four beat phrase – a call or prompt. The
students as a group or individually played the same phrase back without dropping a beat. The
imitation or echo was exact and not an improvised answer. No notation or detailed explanation
of the call was given.

**Call and response.** The teacher began all call and response activities by establishing a
steady beat and a starting pitch. The teacher played a four beat phrase – a call or prompt. The
response – an improvised phrase – was given by an individual or by the whole group without
dropping a beat. A group response involved all students in the class responding at the same time
to a call or prompt from the teacher. The resulting sound was not musically desirable; however,
the group response provided a safe and comfortable condition for the beginning improviser.
Within the cacophony of sound the student could experiment with musical ideas without the fear
of others’ criticism or judgment. No notation or detailed explanation of the call was given.

**Improvisation instruction with collaborative reflection.** All participants received six
days of improvisation instruction following the introductory improvisation instruction. The
sessions continued instruction in improvisation including use of elements from the introductory
instruction with the addition of experiences in the development of a harmonic (chordal) and
melodic vocabulary in the key of Concert Bb as well as the new key of Concert Eb. All instruction and playing was done without notation.

Each session also included collaborative reflection activities. The reflection activities occurred in both the large instruction group and the small friend groups.

**Introductory improvisation instruction.** All participants received six days of introductory instruction in improvisation before receiving the collaborative reflection treatment sessions or the maintenance improvisation sessions. During the introductory sessions participants received instruction in basic melodic and rhythmic patterns. All instruction and playing was done without notation. No collaborative reflection was used during the six sessions.

**Large instruction group.** All improvisation instruction occurred in the students’ large group classes. The large groups were organized by grade and instrument family resulting in the following groups: (a) seventh grade woodwinds, (b) seventh grade brass and percussion, (c) eighth grade woodwind, (d) eighth grade brass and (e) eighth grade percussion.

**Maintenance improvisation instruction.** All participants received six days of activities designed to maintain improvisation skills. No collaborative reflection was used during these six days. No new instruction in improvisation occurred.

**Playing by ear.** The students performed simple folk songs replicating the aural image in their mind by playing it on their instrument without notation.

**Small friend group.** Collaborative work occurred in friend groups of two or three students. The students chose the members of their groups as opposed to a teacher assigning the members of a group. The small friend groups would typically work in an isolated small practice room adjacent to the large instruction room. According to MacDonald & Miell (2000), friend groups were found to be more successful than teacher assigned groups when used in composition
and improvisation activities. “Music is a key factor in determining and characterizing friendship for young people” (MacDonald & Miell, 2000, p. 60); using social relationships when organizing groups is justified.

**Trading fours.** When trading fours one improviser played a four-measure phrase and another improviser would respond with a new but related four-measure phrase. A musical conversation would continue until the responses ceased. The improvised conversation could take place between two improvisers or pass through a group of improvisers. A continuous melodic line was created without dropping a beat.

**Treatment Sessions**

All participants received 18 days of improvisation instruction on their primary band instrument during a 36-day mini course from September to October. The 18 days were divided into three treatment periods: Treatment A – six sessions of introductory improvisation instruction with no collaborative reflection activities, Treatment B – six sessions of continued improvisation instruction with collaborative reflection activities and Treatment C – six sessions of improvisation maintenance activities with no collaborative reflection activities. All improvisation sessions were 10 minutes in length. The Treatment B sessions also included an additional 10 minutes for collaborative reflection activities (described in the next section and also see Appendix C).

**Treatment A – Introductory improvisation instruction with no collaborative reflection.** The six introductory improvisation instruction sessions were provided over a six-day period. These sessions included student experiences in playing within a given key and tonality, development of a melodic and harmonic vocabulary in the key of Concert Bb or the use of organized percussion colors using appropriate instrumentation. Basic rhythmic patterns used
included half, quarter, eighth and sixteenth notes and their corresponding rests as well as eighth note syncopation and the appropriate use of silence. The application of dynamics and articulations were also explored. Through the use of *playing by ear, call and echo* as well as *call and response* activities students developed the ability to use these elements in their group and solo improvisations.

The call and echo patterns familiarized the students with appropriate patterns for the creation of melodies. In the beginning the patterns were presented as single measures in 4/4 or 3/4 time. The length and complexity of the patterns increased in preparation for expanding the students’ musical vocabulary for use in the *call and response* activities. The patterns were presented as a basic musical vocabulary upon which the students could manipulate and elaborate for use in their own improvisations.

On Day 3 of the Treatment A sessions, basic patterns were used to establish the key through a cadential emphasis based on the tonic or home tone of the key of Concert Bb major. The melodic and rhythmic patterns were based on Gordon’s learning sequence activities found in Gordon, Azzara & Grunow (2000) and Azzara & Grunow (2006). Unison and stepwise patterns were presented followed by the Sol – Do pattern of the key (see Figure 3.1). The call and echo experiences were completed aurally without notation. All of the students echoed the patterns together as a class. If some or all of the students did not echo the exact pattern, the teacher repeated the same pattern until all or the majority of the students achieved the correct notes.

Figure 3.1 Initial Call and Echo Patterns
The following steps were used to organize the introductory improvisation experiences for each Treatment A session:

1. identification of a goal or emphasis,
2. a model of initial patterns presented through call and echo,
3. addition of expressive elements such as dynamics and articulations,
4. time for student exploration and
5. an opportunity for performance through group or solo call and response.

The introductory sessions were the seventh grade participants’ first exposure to improvisation. Instruction in improvisation through *call and echo* and *call and response* activities familiarized the students with the structure and vocabulary essential for successful improvisational experiences. Developing an emotionally healthy and stress-free environment was also an important aspect of the introductory sessions. The instructor encouraged the participants by assuring them that all of their improvisations were acceptable. “It’s okay to make a mistake; there are no wrong notes only bad resolutions and the right note is only a ½ step away” (Azzara, class presentation, November 15, 2005).

The eighth grade participants received similar instructional strategies as the seventh grade participants. The introductory instruction was a review for all of the eighth grade participants who were part of the middle school band program the previous school year. Due to the school’s unique schedule the eighth grade students had not received instruction in improvisation since February of the previous school year – seven months before Treatment A.

During Treatment A the participants did not reflect formally in class on their improvisations. The teacher/researcher used supportive and motivational comments to encourage a healthy environment for improvising. Her comments also contained evaluative or
instructive remarks similar to past practice to help the participants identify their strengths and weaknesses for the development of refined and skillful improvisations.

**Treatment B – Improvisation instruction with collaborative reflection.** The six sessions of continued improvisation instruction included use of elements from Treatment A with the addition of experiences in the development of a harmonic (chordal) and melodic vocabulary in the key of Concert Bb as well as the new key of Concert Eb.

On Day 1 of Treatment B call and echo patterns representing a chordal emphasis (Gordon, et al, 2000; Azzara & Grunow, 2006) based on the tonic and dominant chords of Bb major (see Figure 3.2) were used for the call and echo. These patterns provided chordal leaps for a sense of harmonic structure based on the tonic and dominant chords. On Day 2 the patterns emphasized stepwise motion through use of both neighboring and passing tones (see Figure 3.2).

A: Chordal emphasis

![Chordal emphasis](image1)

B: Melodic emphasis

![Melodic emphasis](image2)

C: Rhythmic emphasis

![Rhythmic emphasis](image3)

Figure 3.2 Call and Echo Patterns for Treatment B

The melodic patterns provided a sense of flow and contour useful in creating a melody. Again all of the call and echo patterns were presented without notation and completed aurally. All of the students echoed the patterns together as a class. If some or all of the students did not echo the
exact pattern, the teacher repeated the same pattern until all or the majority of the students achieved the correct notes.

On Day 4 when a rhythmic emphasis was planned the patterns also included assigned rhythms resulting in patterns similar to those in Figure 3.2. As the students gained proficiency and confidence the patterns were combined and lengthened to facilitate use in improvised phrases for the call and response activities. The same basic patterns were repeated in both Concert Bb and Eb major. The use of appropriate and varying dynamics and articulations were also encouraged during the call and echo process.

The use of percussion colors created by the use of auxiliary instruments and unique performance techniques such as rim taps, shots and non-traditional stickings were added to the non-pitched percussion instruction. The previous rhythmic patterns as well as dotted eighth/sixteenth note patterns were also explored. Again through the use of call and echo as well as call and response activities students developed the ability to use these elements in their improvisations.

The following steps were used to organize the improvisation performance experiences for each Treatment B session:

1. identification of a simple improvisational structure containing a clear goal,
2. a model from the teacher or a skilled student,
3. time for student exploration,
4. an opportunity for group or solo student performance or sharing and
5. reflection time – personal and collaborative (Beitler & Thornton, 2010).

Treatment C – Improvisation maintenance with no collaborative reflection. The six maintenance improvisation sessions included improvisational activities to preserve the skills and
techniques developed in the previous instructional sessions but not necessarily to add new information or practices. Activities such as playing songs by ear, playing rhythmic improvisations on scale degrees, improvising patterns with specific articulations and dynamics and also improvising four measure phrases based on Concert Bb and Eb major and g minor keys were used during the six maintenance improvisation sessions. No collaborative reflection techniques were used during the six-day maintenance treatment.

The following steps were used to organize the maintenance improvisation activities for each Treatment C session:

1. identification of the desired skill for review,
2. model from the teacher or a skilled student,
3. time for student exploration and
4. group performance.

See Appendix C for a summary of the eighteen improvisation instruction sessions and their subsequent reflection sessions.

Collaborative Reflection

A 10-minute collaborative reflection session was completed at the end of each Treatment B Session (continued improvisation instruction) for a total of six sessions. The collaborative reflection sessions were two tiered – individual journal writing and group collaborative reflections. After completing a written reflection based on two of the writing prompts listed below, the students participated in verbal and musical conversations.

Journal writing. Each participant received a music journal created by the teacher/researcher. The journal consisted of 10 pages of blank paper for writing reflective entries and 10 pages of blank staff paper for sketching musical ideas and motives. All of the participants
were encouraged to write their personal reflections in their music journal as well as sketch musical ideas throughout the continued improvisation instruction sessions.

The six 10-minute reflection sessions started with each student responding to two of the following writing prompts:

1. What was most uncomfortable about improvising? What was okay about improvising?
2. What did you hear?
3. What do you think worked well?
4. What would you change?
5. What would you like to borrow from a classmate?

Prompt numbers 1 and 2 were used during the reflection time of the first session; numbers 2 and 3 were used in the second and third sessions, numbers 2 and 4 for the fourth and fifth sessions and numbers 2 and 5 for the sixth session. Responses were written in the students’ personal music journals. Students were required to write at least one complete sentence using good writing conventions – grammar and punctuation – in response to the written prompt.

**Collaborative reflections.** The collaborative reflection time took place during the six Treatment B sessions immediately following the above-defined writing experience. The collaborative reflection took place in one of two settings: large instruction group setting (the improviser, his or her peers and the teacher) and small friend group setting (a group of two or three students in which the students chose the members). Of the six total collaborative reflection times, three sessions were in the large instruction group and three sessions in a small friend group. Both settings consisted of students’ verbal and musical conversations as well as demonstration of successes and challenges inspired by their journal entries and also opportunities to refine and manipulate new musical responses.
In the large instruction group the teacher and students participated in call and response activities. A student improviser would respond to the teacher’s call with a responding phrase then the teacher would present a related call to the next student. The chain would continue through the entire class resulting in one continuous melodic line without dropping a beat.

Immediately following a large instruction group call and response activity, the students were encouraged to talk about specific musical attributes, things that worked and things that could be improved upon for the next experience. The teacher modeled encouraging and nurturing comments in order to dissuade derogatory or demeaning remarks from the students.

The small friend groups met in practice rooms or quiet areas adjacent to the large instruction room. The students played improvisatory phrases in a call and response style based on a goal or emphasis for the session. Similar to the call and response activity in the large instruction group, the small friend group played a continuous loop of phrases without dropping a beat. The small friend group also discussed the challenges and successes they were experiencing and provided their friends with comments of encouragement and refinement.

All of the large instruction group sessions and some of small friend group interactions were audio recorded to document the nature of the participants’ reflective talk. Not every small friend group interaction was recorded. Rather, a small friend group was randomly selected by lottery for audio recording, one for each of the three small group sessions.

See Appendix C for a summary of the 18 improvisation instruction sessions and their subsequent collaborative reflection sessions.

**Development of the Improvisation Prompts**

Four improvisation prompts – Prompt A, B, C and D (see Appendix D) – were written specifically for the recorded assessment sessions. The researcher and a colleague wrote all four
prompts. Each prompt was written using similar performance elements such as familiar key signatures, traditional rhythmic and melodic motives. The participants experienced similar prompts during the treatment sessions. Two of the prompts – A and B – were used in the pilot study. Two additional prompts – C and D – were added to the full study due to a change in research design.

The expertise of an instrumental music educator with a DMA in composition was solicited to verify the appropriateness and equality of the four prompts. His comments were positive. Slight adjustments to the notation of the prompts were made for ease of performance and quality of presentation.

Development of the Assessment Measures

Two tools – Improvisation Criteria Worksheet (ICW – see Appendix E) and the Improvisation Achievement Measure (IAM – see Appendix F) – were created to evaluate the participants’ improvisation achievement. The two assessment tools were used for ease and accuracy of scoring in order to evaluate each participant’s recording. The ICW acted as a worksheet to guide the judges to an accurate final rating on the IAM.

In developing the ICW, attention was given to establishing criteria based on accepted constructs from previous studies (Azzara, 1993; Burnsed, 1978; Partchey, 1973; Smith, 2009). Based on the previous work, the resulting two dimensions of the ICW were defined as Performance Skills and Creative Development. These two equally important dimensions compliment each other and intertwine in the process of improvising (Burnsed, 1978; Partchey, 1973). Performance Skills were defined as the needed referents or skill bases on which the improviser created his or her spontaneous musical pieces. Creative Development was defined as the process by which the improviser took the performance skills and arranged them in novel and
imaginative ways (Berkowitz, 2010; Pressing, 1988). The two dimensions were used in both the ICW and the IAM to focus the judges on specific areas of improvisation for ease of scoring (Brophy, 2000).

**Improvisation Criteria Worksheet**

The first tool, the *Improvisation Criteria Worksheet* (ICW - see Appendix E) was developed to serve as a guide for judges as they noted their scores on the IAM. The ICW was designed as a rubric-like grid with criteria organized on a 5-point scale. The criteria in the grid served as a detailed description of the rating scale employed in the IAM. Use of the ICW worksheet allowed the IAM to have a clear and simple design.

The two dimensions used in the ICW, Performance Skills and Creative Development, were divided into two elements each. *Performance Skills* included criteria specific to the elements of Tonal/Color and Rhythm and the *Creative Development* dimension included criteria for the elements of Expressiveness and Form.

The term Tonal was used for all wind and mallet percussion participants’ use of pitch; Color was used for all non-pitched percussionists’ use of percussive colors produced by various instruments and their resultant performance techniques. Two percussion specialists with doctorates in music education were asked to review the ICW for appropriate use with non-pitched percussionists. Both felt the Tonal/Color element would work fine with non-pitched percussion. They offered suggestions for clarification of some of the criteria; these were included in the final draft of the worksheet.

Within the ICW grid, check boxes provided the ability to quickly and easily mark each criterion achieved by the participant. The descriptions for each check box defined the graduated increments of the 5-point rating scale. A quick glance at the completed worksheet gave a clear
picture of the participant’s strengths and weaknesses. The checkmarks on the ICW were not used as data for the final score. The ICW was designed to provide clarity and accuracy for the final score on the IAM.

**Improvisation Achievement Measure**

The second tool, *Improvisation Achievement Measure* (IAM - see Appendix F) was used to assign a score for each dimension. A modified 5-point Likert scale (Murphy & Alexander, 2004) with a range from Random (0) to Complex (5) for the *Performance Skills* dimension and a range from Ordinary (0) to Unique/Novel (5) for the *Creative Development* dimension allowed for flexibility and clarity in scoring. Each point of the scale was broken into thirds in order to anchor the final score. The modified 5-point Likert scale corresponded to the five criteria-based points of the rubric grid in the ICW. The scores for each dimension provided a final combined IAM score used to measure the participants’ improvisation achievement. The five points for each criteria category resulted in a possible total of 20 points.

**Pilot Study**

**Purpose of the pilot study.** The purpose of the pilot study was to aid in the development of the two researcher-created assessment tools and assess their appropriateness for use in the full study. The pilot study was guided by the following questions:

1. Were the criteria and dimensions stated clearly and concisely on the ICW so as to assist in an accurate rating on the IAM?
2. Did the formats of the ICW and IAM compliment each other and assist in the ease and accuracy of rating?
3. Was there acceptable inter-judge reliability?
**Participants.** The participant judges of the pilot study were two instrumental music teachers with experience in improvisation instruction with middle school students both in and outside of the jazz idiom.

**Procedures.** Fifteen eighth grade students who did not participate in the full study produced recordings of their improvised responses to two prompts. The recordings were produced during the student’s regular instruction time using the following protocol (see Appendix G).

After greeting the participant, the researcher provided a short explanation of the recording procedures including the key signature of the prompt for the wind players or an overview of the available percussion instruments for the non-pitched percussionist. Then the participant was given up to one minute to explore the appropriate notes of the key signature or the available percussion instruments.

Percussionists had the option of choosing between pitched and non-pitched percussion instruments for their prompt and performance. The non-pitched percussion prompts contained all of the elements of the original prompts except for pitch. Pitch was replaced by the use of various tone colors created by indefinite-pitched percussion instruments. The teacher/researcher encouraged the participant to respond with an appropriate phrase.

Next, the researcher started the audio recording device and announced the participant’s number. The researcher then played one of two prompts. Immediately following the prompt, the student played a responding improvised phrase. Specific starting and ending notes and length of the phrase were not discussed or identified. The participant was free to make that decision at his or her own discretion.
Lastly, following the participant’s improvised response the researcher stopped the recording device and excused the participant to return to class. The recordings were used as improvisation examples for the participants in the pilot study.

The judges took part in a training session conducted by the researcher. During the training session the researcher reviewed the procedures for the use of ICW and IAM. The participant judges then assessed five recordings in the following sequence. First, the participants and the researcher together assessed two recordings using the assessment tools. This allowed for discussion and clarification of terms. Secondly, the participants assessed three recordings individually followed by a comparison of their individual results with the results of the other judge. The researcher was satisfied by the agreement of the two judges’ scores. The participant judges were then given a packet to complete on their own containing instructions (see Appendix H), measurement forms – ICW and IAM – and a CD containing the 15 middle school students’ improvised responses.

The judges rated the 15 recordings and returned the completed ICW and IAM forms to researcher within three weeks of the training session. After rating the student recordings the pilot study participant judges completed a questionnaire requesting their perceptions of the appropriateness and effectiveness of the tools.

**Results.** Responses and comments from the questionnaire provided positive feedback regarding the use of the two tools. Both participant judges commented on the usefulness of the ICW in guiding their final score on the IAM, making the process perspicuous. The IAM 5-point Likert scale according to one judge provided the “wiggle room” (personal communication, May 15, 2011) needed to support their professional judgment in the final score.
A Pearson product-moment correlation coefficient was computed to assess the relationship between the two judge’s scores. A moderately high positive correlation, \( r = .794 \) was achieved.

**Conclusions.** Both participant judges stated in the survey that the criteria and dimensions on the ICW were very clearly defined. It appeared the use of the ICW and IAM did provide for ease and accuracy of scoring. The inter-judge reliability of IAM was deemed appropriate for further use in evaluating improvisation achievement. The ICW worksheet and the IAM Likert scale remained the same for the full study.

**Data Collection for the Full Study**

**Improvisation recordings.** During the course of the 22-day study, each participant created four recordings for evaluation with the assessment tools – the ICW and the IAM. The first recording was done before the first treatment session; the other three recordings were completed at the end of three subsequent treatment sessions. The recordings were documentation of the participants’ improvisational achievement at the four specific points of the intervention. The procedures were the same for all four recording sessions; however, a different prompt was used for each recording. A new prompt was used for each recording in order to promote complete spontaneity.

Participant identification codes – numbers and letters – were added to all audio recordings through use of Garage Band. An electronic on-line randomizer (Urbanik & Plous, 2011) generated the random numbers while the letters represented the prompt code. The researcher announced the random codes at the beginning of each recording. These codes provided efficient organization and assisted in student anonymity. A few recordings were edited
to eliminate intermittent participant talking and also to provide better volume levels. The participants’ improvisations were not altered in any way except for volume.

**Reflective talk.** The written journal entries for all of the participants as well as audio recordings of the large instruction group and small friend group collaborative reflection times were gathered. Recordings of the large instruction groups’ reflective talk (improviser, peers and teacher) and the selected small friend groups’ reflective talk were transcribed. All recorded participants were given a copy of the transcription to assure that the transcriptions represented their thoughts and ideas clearly and properly. The transcriptions and the journal entries were used for insight into the talk used by the participants during collaborative and personal reflection time.

**Equipment.** All audio recordings of the participants’ improvisations and reflective talk were done digitally on a Samsung Zoom Q3 recorder. The digital recordings were stored on Secure Digital (SD) memory cards. The appropriate improvisation recordings were transferred to four Compact Disks (CD), one for each of the four judges. Each recording was labeled with a random number and letter code in order to protect the identity of the participants and to conceal the four repetitions of the assessment for that individual.

**Procedures.** All of the middle school band students ($N = 62$) from a small suburban middle school in Eastern Pennsylvania were invited to participate in the study. Parents of the students received a letter at the end of August 2011 explaining the research project. A formal consent/assent form (Appendix A) and a copy of the invitational script (Appendix B) were included with the parental letter.

The invitation script was read to all seventh and eighth grade band members on August 31, 2011. After answering the students’ questions, the researcher distributed consent/assent
forms to interested students. Signed forms were due back two weeks later on September 8, 2011. The first improvisation recording – entry assessment – was completed on September 12, 2011 and was immediately followed by the Introduction treatment session, the first of the three six-day treatment sessions.

Of the 62 students in the middle school band program, 44 instrumental music students \((n = 44)\) accepted the invitation to participate in the study and completed all phases of the study. The 62 middle school band students ranged in age from 12 years to 13 years 11 months with occasional older retention students.

The participants were assessed on their improvisation achievement four times over a 22-day period. All participants performed one recorded improvisation sample before the first treatment session and after each of the three subsequent sessions for a total of four recordings. All of the recording sessions took place in a small room adjacent to the instrumental music room of the middle school. The teacher/researcher and the participant were the only people in the room during the recording. The same protocol was used for all four recording sessions (see Appendix G).

After greeting the participant, the researcher provided a short explanation of the recording procedures including the key signature of the prompt for the wind players or an overview of the available percussion instruments for the non-pitched percussionist. Then the participant was given up to one minute to explore the appropriate notes of the key signature or the available percussion instruments.

Percussionists had the option of choosing between pitched and non-pitched percussion instruments for their prompt and performance. The non-pitched percussion prompts contained all of the elements of the original prompts except for pitch. Pitch was replaced by the use of
various tone colors created by indefinite-pitched percussion instruments. The teacher/researcher encouraged the participant to respond with an appropriate phrase.

Next, the researcher started the audio recording device and announced the participant’s number. The researcher then played one of the four prompts. The order of four prompts was randomized by lottery for use in the four recording sessions. Each participant would receive each prompt once but in a different order. For example, one participant may be given Prompt A for their first recording, B for the second, C for the third and D for the fourth; while another participant may have received Prompt C for their first recording, B for the second and D for the third and A for the fourth.

Immediately following the prompt performed by the teacher/researcher, the participant played a responding improvised phrase. Specific starting and ending notes and length of the phrase were not discussed or identified. The participant was free to make that decision at his or her own discretion. Lastly, following the participant’s improvised response the researcher stopped the recording device and excused the participant to return to class.

The researcher administered the testing sessions for the participants’ improvisation recordings. The teacher/researcher’s delivery of the prompt – call – was similar to the instructional strategies of the classroom. The teacher/researcher maintained consistency in the presentation of the improvisation prompts by delivering the prompts in both the instruction and the testing settings. The role of the researcher did not appear to compromise the data collected or the integrity of the study.

**Judges.** Four judges were used to assess the students’ improvisation achievement using the ICW and the IAM. All four were music educators with experience instructing instrumental music students of middle school age. Two of the four judges used to evaluate the recordings for
the full study were participants in the pilot study. One of the four judges had participated in the pilot study and received training in the use of the ICW and IAM at that time. The remaining three judges received training prior to using the ICW and IAM for the full study.

The training session included an overview of the study’s purpose and methodology followed by an examination of the assessment tools as well as the dimensions and their criteria. A practice session using student recordings from the pilot study followed a concise and detailed explanation of the scoring procedure. Two test recordings were evaluated as a group allowing for group discussion and questions about the evaluation process. The judges then rated three recordings independently. After each completed evaluation the judges, guided by the researcher, compared their final scores and discussed any discrepancies in their evaluations.

The judges were aware of the four assessment sessions due to the four different prompts presented on the recordings, however, the coding and random order of the recordings concealed the identity of the participant, the four recordings from the same participant and the order of the participants’ recordings.

One of the initial four judges provided erratic and inconsistent scores; consequently, the scores from the unreliable judge were not used in the final analysis. A replacement judge was identified. The replacement was one of the two judges used in the pilot study. After a review of the evaluation process, the new judge reassessed the fourth group of recordings. The new scores replaced the unreliable scores of the initial judge.

**Scoring procedures.** Upon completion of the three treatment periods and the four corresponding recording sessions, four judges evaluated the individual recordings for the participants’ improvisation achievement. The same judge assessed all four of the recordings produced by a participant. Each judge received half of the total recordings from two of the four
instrument groups (see Table 3.2) as well as 10 randomly selected recordings in common chosen from across all four groups.

Table 3.2

*Distribution of Recordings to the Judges.*

<table>
<thead>
<tr>
<th>Instrument Group</th>
<th>$n$</th>
<th>Judge A</th>
<th>Judge B</th>
<th>Judge C</th>
<th>Judge D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seventh Grade Woodwind</td>
<td>8</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Seventh Grade Brass &amp; Percussion</td>
<td>14</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Eighth Grade Woodwind</td>
<td>13</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Eighth Grade Brass &amp; Percussion</td>
<td>10</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

Each judge listened to the participant’s individual improvisation recording three times; the first hearing was for familiarization with the piece, the second hearing to check the appropriate criteria for Performance Skills on the criteria worksheet (ICW). The judge then immediately translated the checked criteria from the worksheet to the modified 5-point Likert scale (IAM) by placing an X on the continuous line to represent the score for each element of the Performance Skills. The third hearing required repeating the above process for the Creative Development dimension (see Appendix H). All of the judges returned their completed score sheets and CD with the recordings within one month of the training session.

A trusted colleague who teaches middle school math then interpreted the Xs on the IAM score sheets. The researcher reviewed the scoring procedures with the interpreting teacher. Due to her math skills, her interpretation of the graphic scores seemed particularly reliable. The interpreter created a spreadsheet with all of the scores using the participant codes. She did not have access to the judges’ names or any identifying data from the participants. Each X on the continuous line was assigned a number to the hundredths place value. The four scores –
Tonal/Color and Rhythm for the performance skills category and Expressiveness and Form for the creative development category – were added together for the total score used in the analysis.

The Improvisation Criteria Worksheet (ICW) was not used as data in the study. It was purely designed to aid the judges for ease and accuracy in their final decisions for the Improvisation Achievement Measure (IAM) Likert scale.

Analysis of Data

Descriptive statistics for the scores of the four tests – the pretest, two midtests and the posttest – were calculated for examination of the equality of means. The differences of improvisation achievement scores due to treatment were calculated by using a repeated measures analysis of variance (RM-ANOVA). Differences in the achievement level by instrument family and grade were reported within the RM-ANOVA. A pairwise comparison with Bonferroni corrections was conducted to test for the simple main effects within each factor. Differences in the achievement level by gender were not calculated due to the lack of female participants in the brass and percussion treatment groups.

Reporting of the collaborative reflection responses. A collection of the comments by the improviser, peer and teacher was done. Transcriptions from the audio recordings of large instruction group discussions, small friend group interactions and quotes from the individual student journals provided illustrations of the verbal and written reflections of the participants. Pseudonyms were used to protect student identity. The comments were not quantified or qualified in any way but provided a glimpse into the collaborative reflection talk of middle school instrumental music students and their teacher.
Inter-judge reliability. The inter-judge reliability of the four final judges was determined through the calculation of an intraclass correlation coefficient (ICC) of 10 common recordings. The intraclass correlation compared the variability of the ratings from each participant to the total variation across all ratings and all participants.
CHAPTER 4

Results

The purpose of the study was to investigate the effect of collaborative reflection on the improvisation achievement of seventh and eighth grade instrumental music students. The three specific research questions posed in Chapter 1 provide the organization for the presentation of the results. First, the differences in the improvisation achievement scores for the students when they participated in collaborative reflection as compared to when they did not participate – main effect of treatment on the dependent variable. Second, the investigation of the differences in the students’ improvisation achievement scores based on gender, grade and instrument group – an independent variable analyses. Third, the nature of the talk that occurred between the improviser, his or her peers and the teacher during the collaborative reflection time – narrative examples of the participants’ collaborations.

A three-way repeated measures analysis of variance (RM-ANOVA) was used to identify the differences due to collaborative reflection, instrument, grade and gender on improvisation achievement. Post hoc comparisons were used to clarify any interactions between the independent variables.

Participants

The initial participants of the study included 45 seventh and eighth grade instrumental music students. One child was eliminated due to multiple absences during the treatment sessions bringing the total to 44 participants. There were 22 seventh graders, which included 8 woodwind students and 14 brass/percussion students, and also 22 eighth graders, which included 12 woodwind students and 10 brass/percussion students. Of the 44 participants, 27 were male and
17 were female. All participants had three to four years of experience playing their instrument and were an average age of 12 years and 9 months.

There were few participant absences during the data collection period. One student missed three days of one treatment session and also the administration of the third assessment; consequently, the incomplete data from this participant was eliminated from the study. There were two additional absences by two separate individuals. They both missed an assessment that was administered the following day before the next treatment session.

**Data Analysis**

**With-in subjects analysis.** A three-way repeated measures analysis of variance (RM – ANOVA) was used to identify the differences in *Improvisation Achievement Measure* (IAM) scores due to treatment conditions. Each participant completed four improvisation recordings and three treatment sessions as outlined in Table 3.1 on page 30. The order of Treatments B and C were alternated between two of the four groups to assure that differences in scores were due to the Collaborative Reflection treatment and not merely the additional time and experience improvising. The group means revealed an increase for all woodwind groups from the entry (baseline) assessment of the IAM through the assessment following the Collaborative Reflection treatment sessions with lower scores following the maintenance sessions (see Table 4.1). The Brass/Percussion groups’ means; however, showed an increase after the Collaborative Reflection session and a greater increase after the Maintenance session. The IAM rating scale had a total of 20 possible points with a range of 0 to 20.
Table 4.1

Group Means and Standard Deviations for Treatment

<table>
<thead>
<tr>
<th>Groups</th>
<th>n</th>
<th>Entry</th>
<th>T-A Introduction</th>
<th>T-B Collaboration</th>
<th>T-C Maintenance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Woodwind (WW)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7th grade – C/M</td>
<td>8</td>
<td>7.50</td>
<td>8.26</td>
<td>11.65</td>
<td>10.12</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(3.16)</td>
<td>(3.70)</td>
<td>(3.90)</td>
<td>(3.50)</td>
</tr>
<tr>
<td>8th grade – M/C</td>
<td>12</td>
<td>9.73</td>
<td>8.95</td>
<td>10.39</td>
<td>9.89</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(3.81)</td>
<td>(2.87)</td>
<td>(3.60)</td>
<td>(3.40)</td>
</tr>
<tr>
<td>WW Total</td>
<td>20</td>
<td>8.84</td>
<td>8.67</td>
<td>10.90</td>
<td>9.98</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(3.65)</td>
<td>(3.15)</td>
<td>(3.67)</td>
<td>(3.35)</td>
</tr>
<tr>
<td>Brass/Percussion (B/P)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7th grade – M/C</td>
<td>14</td>
<td>9.07</td>
<td>9.56</td>
<td>10.11</td>
<td>10.44</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(3.89)</td>
<td>(3.71)</td>
<td>(4.11)</td>
<td>(3.46)</td>
</tr>
<tr>
<td>8th grade – C/M</td>
<td>10</td>
<td>9.50</td>
<td>12.72</td>
<td>12.56</td>
<td>13.12</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(3.31)</td>
<td>(2.02)</td>
<td>(2.37)</td>
<td>(1.94)</td>
</tr>
<tr>
<td>B/P Total</td>
<td>24</td>
<td>9.25</td>
<td>10.88</td>
<td>11.13</td>
<td>11.56</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(3.60)</td>
<td>(3.45)</td>
<td>(3.65)</td>
<td>(3.17)</td>
</tr>
<tr>
<td>Grade</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seventh</td>
<td>22</td>
<td>8.50</td>
<td>9.09</td>
<td>10.67</td>
<td>10.32</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(3.64)</td>
<td>(3.67)</td>
<td>(4.06)</td>
<td>(3.40)</td>
</tr>
<tr>
<td>Eighth</td>
<td>22</td>
<td>9.63</td>
<td>10.66</td>
<td>11.40</td>
<td>11.34</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(3.51)</td>
<td>(3.12)</td>
<td>(3.25)</td>
<td>(3.20)</td>
</tr>
<tr>
<td>Total</td>
<td>44</td>
<td>9.06</td>
<td>9.87</td>
<td>11.03</td>
<td>10.83</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(3.60)</td>
<td>(3.46)</td>
<td>(3.62)</td>
<td>(3.30)</td>
</tr>
</tbody>
</table>

Note. T = Treatment followed by the session letter, C/M = order of treatment (Collaboration followed by Maintenance), M/C = order of treatment (Maintenance followed by Collaboration). The boldface data denotes the highest mean scores for the group.

The RM-ANOVA was used to test the equality of means by comparing the multiple participant means over the four repetitions of the assessment. The minimum p value was set at .05 for the entire study. Mauchly’s test of sphericity indicted that the assumption of sphericity had not been violated $\chi^2 (5) = 5.12, p = .401$. There was a statistically significantly higher score for the
collaborative reflection treatment on the improvisation achievement, \( F(3,120) = 7.86, p < .001 \).

Although the RM-ANOVA showed that the means of the treatment versus the grade and instrument group had a statistically significant interaction, \( F(3,120) = 2.90, p = .038 \), with a small to modest effect size of \( \eta_p^2 = .068 \). The partial Eta squared was just .07, which means that the interaction by itself accounted for only 7% of the overall variance.

Table 4.2

Repeated-Measures Analysis of Variance for Within-Subjects Effects of Treatment

<table>
<thead>
<tr>
<th>Source</th>
<th>( df )</th>
<th>( F )</th>
<th>( \eta_p^2 )</th>
<th>( \rho )</th>
</tr>
</thead>
<tbody>
<tr>
<td>With-in subjects</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment</td>
<td>3</td>
<td>7.86*</td>
<td>.16</td>
<td>&lt; .001</td>
</tr>
<tr>
<td>Treatment X Grade</td>
<td>3</td>
<td>0.56</td>
<td>.01</td>
<td>.64</td>
</tr>
<tr>
<td>Treatment X Instrument</td>
<td>3</td>
<td>1.98</td>
<td>.05</td>
<td>.12</td>
</tr>
<tr>
<td>Treatment X Grade X Instrument</td>
<td>3</td>
<td>2.90*</td>
<td>.07</td>
<td>.03</td>
</tr>
<tr>
<td>With-in group error</td>
<td>120</td>
<td>(5.55)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. Values enclosed in parentheses represent mean square errors. *\( p < .05 \).

A post hoc pairwise comparison of the four assessments using the Bonferroni corrections revealed a slight increase in scores from the Entry to Introduction assessment (9.06 ± 3.60 vs. 9.87 ± 3.46) with no statistically significant difference (\( p = .466 \)). However, scores for Entry to Collaboration assessments (11.03 ± 3.63) and Entry to Maintenance (10.83 ± 3.30) elicited statistically significant differences of \( p = .002 \) and \( p = .006 \) respectively.

**Between subjects analysis.** The group means of the independent variables – grade and instrument group – as shown in Table 4.1 (page 58) indicate that all groups improved their improvisation achievement scores from the Entry level. All Woodwind groups had an increase
in their group means for the scores following the Collaborative Reflection (B) treatment; however, all Woodwind groups experienced a decline following the Maintenance (C) treatment session. A slight decline of the Eighth Grade Brass/Percussion group after the Collaborative Reflection session was followed by an increase following the Maintenance treatment (C) session. All Brass/Percussion groups showed an increase following the Maintenance (C) treatment session unlike the decline experienced by the Woodwind groups.

When observed by grade both the Seventh Grade and the Eighth Grade group means increased from the Entry level through the Collaborative Reflection period with a slight decrease during the Maintenance period. The Eighth Grade group started one full point higher at the Entry level than the Seventh Grade group and sustained the advantage throughout the series of four administrations of the measure.

A post hoc pairwise comparison using the Bonferroni corrections to test the simple main effects of the treatment within each factor of the independent variables was completed (see Table 4.3). Due to the small effect size of only 7% of the overall variance of the RM-ANOVA, the results of the comparison of the independent variables are tenuous.

The Seventh Grade students showed an increase in scores from the Entry assessment to the Collaborative assessment (8.50 ± 3.64 versus 10.67 ± 4.06), a statistically significant increase ($p = .01$). The Eighth Grade students showed an increase in scores from the Entry assessment to the Collaborative assessment (9.63 ± 3.60 versus 11.40 ± 3.25) with no statistically significant difference ($p = .42$). The woodwinds showed an increase in scores from the Introductory assessment to the Collaborative assessment (8.67 ± 3.15 versus 10.90 ± 3.67) resulting in a statistically significant difference ($p = .04$). The Brass/Percussion group also produced simple main effects for treatment ($p = .01$); however, the pairwise comparison with Bonferroni approach
Table 4.3

*Pairwise Comparisons of Treatment by Grade and Instrument Group Factors*

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Entry</th>
<th>Introduction</th>
<th>Collaboration</th>
<th>Maintenance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Seventh Grade</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Entry</td>
<td>—</td>
<td>- 0.59</td>
<td>- 2.17*</td>
<td>- 1.83</td>
</tr>
<tr>
<td>Introduction</td>
<td>0.59</td>
<td>—</td>
<td>- 1.58</td>
<td>- 1.23</td>
</tr>
<tr>
<td>Collaboration</td>
<td>2.17*</td>
<td>1.58</td>
<td>—</td>
<td>0.35</td>
</tr>
<tr>
<td>Maintenance</td>
<td>1.83</td>
<td>1.23</td>
<td>- 0.35</td>
<td>—</td>
</tr>
<tr>
<td><strong>Eighth Grade</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Entry</td>
<td>—</td>
<td>- 1.03</td>
<td>- 1.75</td>
<td>- 1.73</td>
</tr>
<tr>
<td>Introduction</td>
<td>1.03</td>
<td>—</td>
<td>- 0.71</td>
<td>- 0.70</td>
</tr>
<tr>
<td>Collaboration</td>
<td>1.75</td>
<td>0.71</td>
<td>—</td>
<td>0.01</td>
</tr>
<tr>
<td>Maintenance</td>
<td>1.73</td>
<td>0.70</td>
<td>- 0.01</td>
<td>—</td>
</tr>
<tr>
<td><strong>Woodwind</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Entry</td>
<td>—</td>
<td>1.67</td>
<td>-2.06</td>
<td>-1.14</td>
</tr>
<tr>
<td>Introduction</td>
<td>-1.67</td>
<td>—</td>
<td>-2.22*</td>
<td>-1.32</td>
</tr>
<tr>
<td>Collaboration</td>
<td>2.06</td>
<td>2.22*</td>
<td>—</td>
<td>0.91</td>
</tr>
<tr>
<td>Maintenance</td>
<td>1.14</td>
<td>1.32</td>
<td>-0.91</td>
<td>—</td>
</tr>
<tr>
<td><strong>Brass/Percussion</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Entry</td>
<td>—</td>
<td>- 1.63</td>
<td>-1.88</td>
<td>-2.31*</td>
</tr>
<tr>
<td>Introduction</td>
<td>1.63</td>
<td>—</td>
<td>-0.25</td>
<td>-0.68</td>
</tr>
<tr>
<td>Collaboration</td>
<td>1.88</td>
<td>0.25</td>
<td>—</td>
<td>-0.43</td>
</tr>
<tr>
<td>Maintenance</td>
<td>2.31*</td>
<td>0.68</td>
<td>0.43</td>
<td>—</td>
</tr>
</tbody>
</table>

* *p* < .05
revealed an increase in scores from the Entry assessment (9.25 ± 3.60) versus Maintenance assessment (11.56 ± 3.17) resulting in a statistically significant difference ($p = .048$).

A comparison for the order of treatment – whether collaborative reflection treatment was administered first or second – was completed through a t-test of the equality of means and resulted in no statistical difference in the scores, $t(42) = -1.77, p = .084$ for the collaborative scores and $t(42) = -1.61, p = .115$ for the maintenance scores.

The group means for gender were not calculated due to the lack of a balanced number of participants of each gender in the groups. The Woodwind group had 4 males and 16 females and the Brass/Percussion had 23 males and 1 female.

**Inter-judge Reliability.** An intraclass correlation coefficient was determined from the ratings of 10 common recordings evaluated by all four judges. The proportions of variance between the four judges scores resulted in a very strong agreement with a coefficient of .863 for the 2-way random average measure.

**Nature of the talk during collaborative reflection.** Transcripts of the collaborative reflection discussions were created from the audio recordings of both large instruction groups and small friend groups. All of the collaborative reflection sessions started with improvised music making. The large instruction group or the small friend group would improvise in call and response style or by *trading fours*. Trading fours required an improviser to play a four-measure phrase that was followed immediately without dropping a beat by another improviser. The continuous music conversation would last until there was no response to a given phrase. Reflection on the process and the product would follow each improvisation session. Some of the reflection time began with the students’ response to a writing prompt. These responses were written in the students’ music journal.
The data from the collaborative reflection talk were not analyzed for themes or categories. It was used purely to describe the nature of talk that resulted from the participants’ reflection time. The collaborative reflection resulted in discussion about the fears and joys of improvising as well as the freedom to create music that was unique to the improviser. Also discussed was the spontaneity within an organized plan. The improvisers talked about the planning that took place in their thoughts as they listen to the preceding improviser and prepare to play. Finally talk about the shared musical conversation ensued in excitement and enthusiasm over shared musical ideas and themes.

**Journal entries.** The first writing prompt – What was most uncomfortable about improvising? What was okay about improvising? – resulted in a discussion about the fears and joys of improvising. The following are selected journal entries by participants:

Matthew, an eighth grade trombonist: “I hate performing in front of people, but improvising’s [sic] fun. I like exploring different note & rhythm patterns.”

Heather, an eighth grade flute player: “Something I find uncomfortable about improvising is, I don’t like not 100% knowing what exactly I’m going to play. When improvising though, I find it very enjoyable to experiment and not have strict guide lines on what you are going to play I enjoy the experimental part of it.”

Teacher’s response: “So the very thing that is most annoying is also what makes it enjoyable. Odd, is it not?”

Participants talked about how improvisation provides freedom from the written page; the ability to create and perform their own musical ideas. Reflections from two participants were:

Greg, a seventh grade percussionist: “I love it [improvising] because we have a freedom of speech in the music. It just comes to mind, and you can play it.”
Michelle, an eighth grade flute player: “…I think it’s fun because I don’t have to read what someone else made up. It’s original, and it’s mine.”

**Eighth grade woodwind group.** A large instruction group continued from their reflection on the ideas initiated by the above response. Improvisation gives the students the freedom to play beyond what they can read. The eighth grade woodwind instruction group had the following discussion:

Ashley: “I do like to be spontaneous…”

Teacher: “Good”

Ashley: “…and when I improvise it kinda is fun because like I just take random notes and put it together and sometimes I come out with some really cool stuff, that I didn’t even know I could play. And it just is really fun because you’re used to just reading off stuff from your pages and when you get off your book and just improvise you find out a lot of cool stuff that you are not doing.”

Teacher: “Yeah, it’s good…. Michelle?”

Michelle: “I want to add that to what Ashley said… that sometimes when I just play around home, with my flute… if I write it down quickly… I can turn it into something… sometimes it’s stuff like I never knew I could play, like she said.”

Teacher: “So you surprise yourself.”

Michelle: “Yeah.”

Teacher: “That’s good…. Heather?”

Heather: “You know what is sort of neat about it? Like Ashley said…you might play something that you had no idea that you knew how to play. But then you try to go and play it in a piece and you cannot play it at all!”
Ashley: *Giggles in agreement.*

Michelle: “So I don’t know…”

Teacher: “So isn’t that bizarre, how... I think that is a really important point. That we see it on the page and it becomes more difficult but actually when we don’t have to think about the notes on the page we can play more complicated things.”

Michelle: “Yeah…or like even if we wanted to write it down you might not know what you just played.”

Teacher: “Right? Yeah!... too complicated for you to write.”

Michelle: “Yeah…”

**Eighth graders.** Despite the spontaneity that improvisation brings to their music-making, the students discussed the planning and thoughtfulness that goes into their improvisations. Also creating a concern about the ability to execute what they “heard in their heads.” Ann, a percussionist, expressed this concern in a journal entry, “The most uncomfortable thing about improv [sic] is not knowing if your [sic] going to be able to recreate it once it leaves your head.”

A trombonist named Jack inadvertently shared his plan for his improvisation with his brass instruction group. The discussion follows:

Jack: “…I got screwed up because of my slide lock.” *The student had the slide lock on when he tried to start his phrase.*

Jack: “I was not expecting that…”

Teacher: “Yeah, that’s upsetting when that happens. But you went on and you did fine.”

Jack: “I had it all planned out and then BOOM.”

Teacher: “Okay…Ah! You had something planned out in your mind.”

Jack: “Yeah!”
Teacher: “Ahead of time?”

Jack: “Yeah, I kinda played the same thing but it still screwed me up.”

Teacher: “Okay. So…would you predict that if you hadn’t had the slide locked, you would have been able to play exactly what you were thinking.”

Jack: “Well, maybe not exact but pretty close.”

Teacher: “Okay…So do you find that happens frequently when you improvise? You have a plan, some kind of an idea, but it still kinda of wanders around that idea; it might not be exactly what is in your head. I think that’s normal.”

_Small friend groups._ The sharing of musical ideas was obvious when listening to the students’ improvised conversations. Many small friend group recordings contained long periods of two or more minutes where friends would improvise without interruption, seamlessly trading four measure phrases creating a musical conversation based on shared musical ideas.

The verbal conversation was also enlightening. In response to the prompt – What did you hear? – Adam, a seventh grade clarinetist, wrote in his journal “What is okay is that I enjoy sharing my ideas and performing in front of people. I herd [sic] everybody use parts from each other’s music to make it one big conversation. I borrowed the same theme that Emma and Amanda are using.”

_Two eighth grade percussionists._ Two eighth grade percussion students had the following conversation after 2:47 minutes of trading fours in a small friend group experience:

Dillon: “I think that the rolling doesn’t really fit there.”

Alex: “Yeah, the rolling doesn’t work”

Dillon: “Yeah, …since it sounds similar, it sounds like we are actually having a conversation.”
Alex: “Yeah, we just got to roll.”

Dillon: “Yeah, we aren’t rolling too good.”

Alex: “We did some good dynamic changes though I think too.”

Dillon: “Hm ha… we just didn’t like crescendo and decrescendo or anything. I’ll try doing that.”

Dillon: *Dillon plays a sixteenth note pattern with a very obvious crescendo and then proceeds with a creative pattern with clear and interesting dynamic contrasts.*

Alex: *Alex responses with a similar but different rhythmic pattern with nice dynamic changes.*

Dillon and Alex: *Next four-measure trade includes crescendos and decrescendos and purposeful accents. They also include an improved roll.*

Alex: “Yeah, yeah that worked fine.”

Dillon: “Yeah, yeah the crescendo made it sound much better.”

Alex: “It added more color and …pizzazz, (changes voice) pizzazz!”

Dillon: *Laughs “So…yeah!”*

*Two eighth grade flute players.* A small friend group consisting of two flute players discovered the intensity of musical conversation in the following exchange:

Samantha: *Plays then giggles – playing scales and figuring out the notes in the key.*

Allison: *Starts to play and ends quickly “I did not end it on the end tone.”*

Samantha: “No, you don’t have to … it’s a conversation. So if I end up …then you are gonna like …finish it. And you can leave it as a question too.”

*They play back and forth for almost two more minutes, echoing and imitating and responding to each other’s patterns and phrases.*
Samantha:  *whispers* “Talk.”

Allison: “Okay…so with you,…I think what you did was cool because you like copied what I did. Like when I give an expression, you pretty much followed the same like,…like quote on quote like…message type thing. So it almost sounded like I stopped and you kept on going. Because it sounded like we were together …sometime it was like all flowing and then all random staccato. But that’s okay because even that happens in life. And that was okay because it flowed like perfectly because it was cool and we like followed each other, we were like…

Samantha: “We were like the two musketeers.”

Teacher:  *Teacher walks into the room*

Allison: “We could not even let go of each others’…we were like…like I would play then Samantha would play and I would play. We were keeping our gaze, …looking at each other.”

Samantha:  *Very excited voice* “Yeah, we were staring at each other playing.”

Teacher: “Wow!”

Allison:  *Very excited, talking fast and raising the pitch of her voice.* “We were in sync.

Samantha: “One of us would give an expression on our face and the other would copy it….”

Allison: “It was like the same thing.”

Teacher: “So it was not just about listening but by watching each other you can see facial reactions.”

Samantha: “Like one would leave it as a question and the other would answer it like perfectly. If I would play something low to high, she would do some with lows and highs.

Teacher: “Good, good, good. So was there anything in that time period that didn’t
work?”

Samantha: “Yes, one time…”

Teacher: “Do you know what caused it?”

Allison: “Once I was in the middle of slurring and I just felt like doing something really random and like kinda of happy and it was some random high notes with staccatos. It was really random in the middle of all that flowly stuff. And I was like, I am not going to do that again.”

Teacher: “Okay, so you decided to make a style change, articulation change, but it was too severe, too quick. So…if you want to do that I think you would have to. …”

Allison: “Lead into it…”

Teacher: “Right! Because sometimes you want to turn it around… So you can do it but you have to do it in a way that makes sense. Right? You cannot just randomly jump into it, is that what you are saying.”

Allison: “Right.”

Both large instruction group and small friend group collaboration resulted in musical and verbal conversations that appeared to be meaningful and productive for the participants. Students stayed on task throughout the activities; many times playing and conversing about their music making for extended periods of time as long as ten or more minutes. The collaborative conversations provided words of assurance and encouragement from the improvisers’ peers and teacher.

**Treatment Fidelity**

The researcher kept a journal of field notes in order to accurately replicate the three treatment sessions with each of the groups. Particular attention was given to repeating the same strategies and activities during the alternated order of the treatments. Care was taken to assure
the Seventh Grade Woodwind and the Eighth Grade Brass/Percussion groups received the same improvisation strategies and collaborative reflection activities as the Seventh Grade Brass/Percussion and Eighth Grade Woodwind groups even though the instruction occurred in the reverse order (see Table 3.1).

**Assessment Fidelity**

Each participant produced four assessment recordings – one before the first treatment session and then one following each subsequent treatment session. Administration of the assessment measure was standardized by consistent use of the Protocol for Recording (Appendix G). Each assessment session used a different prompt (see Appendix D) in order to provide for spontaneity and unpredictability. The prompts were reviewed by a music teacher/composer to verify the appropriateness and equality of the four prompts.

The prompts were presented in random order in order to mask recording order from the judges. Also each recording was labeled with identification codes based on the participant’s number and a letter for the prompt code. The four judges did not have access to the identification codes and all recordings were free of any identifying sounds such as participant’s spoken voice. It is highly unlikely that any of the judges had prior contact with the participants. All of the judges were teachers outside of the study’s school district and local area.

**Limitations**

There were six central limitations in the study – treatment group configuration, design for order effect, disadvantage of repeating the assessment measure four times, elimination of the gender variable, start of the study early in the school year and the role of the researcher as teacher. Most of the limitations resulted from the performance of an experimental study in a real classroom setting with intact classes. The first, treatment group configuration, resulted from the
confining dictates of the school schedule. The brass and percussion students needed to be
considered one instrument group because the seventh grade students met for instruction in the
same class period. The unique differences in performance techniques between brass and
percussion may have caused some discrepancies in the scores for the students of these two varied
instrument families. Also the eighth grade brass and the eighth grade percussion met as two
separate instruction groups. Attention was given to exact replication of the instructional
strategies for both of these classes; however, the eighth grade brass/percussion groups may have
an advantage over the combined seventh grade brass and percussion group because of
unintentional emphasis on the differing performance techniques of the two eighth grade groups.

Secondly, the rotation of Treatment sessions B and C to control for order effect may have
caused the participants to be influenced by the change of instruction instead of collaborative
reflection. The groups that received Treatment B followed by Treatment C may have found the
activities in Treatment C less interesting and challenging than the previous Treatment B
instruction. This may have caused a natural decrease in their scores due to boredom or lack of
interest. See pp. 32-36 for details of the instructional strategies of the treatment sessions.

Thirdly, the repetition of the measure initially appeared advantageous. The second and
third repetition of the measure appeared to supply a sense of comfort and appropriate familiarity
to the procedures. During the fourth repetition of the measure some of the students showed mild
indifference to the process exhibiting a laidback and almost lax attitude toward their
performance.

Fourthly, due to the lack of female participants in the brass/percussion instrument group,
it was impossible to calculate the statistical differences between genders for all groups. The
Woodwind group had 4 males and 16 females and the Brass/Percussion had 23 males and 1 female. Therefore, the gender variable was eliminated from the results and conclusions.

A fifth limitation, starting the study early in the school year, may have restricted the results of the study. Due to the dictates of the school schedule the band students only meet for 36 days at the beginning of the year. An immediate start of the study at the beginning of the school year occurred in order to complete the treatment sessions and assessments without interrupting the curricular and performance goals of the ensemble. The early start may have resulted in a fewer participants due to a lack of confidence in the teacher/researcher particularly by the seventh grader students and their parents. The eighth grade students had a relationship with the teacher/researcher that the seventh grade students did not have due to eighth grade participation in the instrumental music program the previous school year. The early start also reduced the time to create a comfortable and emotionally safe environment for performing and creating which may have affected the student’s confidence levels.

Lastly, the role of the researcher as instructor and deliverer of the instructional strategies of the treatments may have created researcher bias or undue influence on the participants. Since the researcher is the regular instructor for all of the participants and the instruction was part of the normal curricular strategies it is unlikely that impropriety resulted.

**Summary of the Results**

In summary, the with-in subjects results showed, through both the inferential statistics and post hoc pairwise comparison, statistically significantly higher scores between the Entry (baseline) assessment scores as compared to the scores following the Collaborative and Maintenance treatment sessions.
The descriptive statistics for the independent variable data showed differences as an increase in the Woodwind group means for the Collaborative treatment whereas the Brass/Percussion had a slight increase in the Collaborative treatment with an greater increase in the Maintenance treatment. As expected, Eighth Grade participants started the study with higher groups means than the Seventh Grade; however, both groups had increased scores through the first two treatments – Introduction and Collaboration – with a slight decrease after the third treatment – Maintenance.

The inferential statistics for the independent variable data revealed statistically significant higher scores in the Woodwind group for the Collaborative treatment than the Entry or baseline scores; however, the Brass/Percussion group showed statistically significant higher scores between the Entry and the Maintenance treatment and not the Collaborative treatment. Gender results were not calculated due to the lack of female participants in the Brass/Percussion groups.

The nature of the collaborative talk between participants resulted in discussions on the following topics: (a) the fear and joys of improvising, (b) the freedom to create, (c) the spontaneous as well as structured thought process, (d) the shared ideas and themes. Both large instruction group and small friend group collaboration resulted in musical and verbal conversations that appeared to be meaningful and productive for the participants.
CHAPTER 5

Summary and Conclusions

According to *Framework for 21st Century Learning* (2004), students need school experiences steeped in (a) critical thinking and problem-solving, (b) creativity and innovation, (c) communication and (d) collaboration. Music improvisation supports the development of critical thinking and problem-solving skills (Webster, 2002) coveted by the 21st century educator. The addition of collaboration and communication to instructional strategies for teaching improvisation may enhance the benefits of the creative activities associated with improvisation.

Through the application of creative activities such as composition and improvisation, the independent adolescent musician becomes a creator of music as well as re-creator. Beegle (2010) commented, “one of the marks of a young independent musician is the ability to improvise skillfully” (p. 219).

Preparing the adolescent to be an independent musician seems to include instruction in improvisation techniques. Instructional strategies for improvising with young instrumental music students are available in publications by Agrell (2010), Azzara & Grunow (2006), Beitler & Thornton (2010) and Herb (2012). Notwithstanding these four examples, improvisation strategies outside of the jazz idiom seem to be limited.

Young musicians may also benefit from opportunities to reflect during the improvisation process (Miell & MacDonald, 2000; Morgan, et al, 2000; Robinson, et al, 2011; Webster, 2003). Further, collaborative reflection with peers and teacher through musical and verbal interactions (Sawyer, 2008) may improve the students’ final creative product (Miell & MacDonald, 2000; Pignato, 2010; Sawyer, 1999).
Recent literature provides insight into the collaborative reflection process and its possible effect on student’s improvisation achievement. The first consideration is the use of collaborative reflection within improvisation instruction to establish a “community of learners” (Younker, 2003). A community of learners requires interactions among all members of the learning environment – teacher to student, student to teacher and student to student. Feedback from the teacher is vital in the creative music making process; however, it appears that the musical and verbal interactions between student musicians are equally important (Morgan et al., 2000).

Another consideration is the nurturing of a student-directed learning environment. One of the first steps to allowing students the freedom to be creative is acknowledging the music understandings brought to the classroom or ensemble from both past school experiences and from living within a community (Campbell, 2009). Learner autonomy allows the student to determine his or her own action and encourages independence of action as a means to education (Green, 2002). The notion of student autonomy within an instrumental music program and particularly an ensemble may seem foreign to some educators; however, the benefits to students’ creative thinking are becoming evident and noteworthy.

The final consideration is the use of an enculturation model within improvisation instruction that allows students to experience spontaneous music making in a “culture of thinking” (Tishman et al., 2007). In the enculturation model, instruction includes the following strategies: (a) a teacher or other cultural exemplar who models the creation of spontaneous music, (b) a healthy learning environment free for exploration, (c) frequent opportunities for musical and verbal dialogue and (d) a vocabulary of sounds through modeling and demonstrating musical phrases and motives.
The above-mentioned strategies, though largely intended for use in the general music classroom, may also benefit the music student in an instrumental music setting. Improvisation for all middle school instrumentalists provides opportunities for musical growth beyond the traditionally accepted instructional strategies and provides opportunities for the young adolescent musician to become both a re-creator and a creator of music.

The establishment of a community of learners, the nurturing of a student-directed learning environment and the use of the enculturation model of instruction may improve the improvisation achievement of middle school instrumentalists. Will the reflective collaboration of an improviser’s peers and teacher provide the instruction, encouragement and support necessary for a young improviser to improve his or her improvisation achievement?

**Purpose Statement and Research Questions**

The purpose of this study was to investigate the effect of collaborative reflection among improviser, peers and teacher on the improvisation achievement of seventh and eighth grade instrumental music students. This investigation was guided by the following questions:

1. Is there a difference in the improvisation achievement scores of students when they participate in collaborative reflection during their improvisational experiences compared to when they do not participate in collaborative reflection?

2. Is there a difference between the improvisation achievement scores of students based on gender, grade and instrument group?

3. What is the nature of the collaborative talk among the improviser, his or her peers and the teacher?
Methodology

A quasi-experimental repeated measure design was used to determine if there were differences due to the independent variables of collaborative reflection, grade, instrument group and gender on the dependent variable – improvisation achievement. The Improvisation Achievement Measure (IAM) was administered to all participants at the beginning of the study and after each of the three treatment periods.

The participants in the study were seventh and eighth grade instrumental music students in a suburban middle school in eastern Pennsylvania. All of the middle school band students \(N = 62\) received a verbal invitation (see Appendix A) and an assent/consent form (see Appendix B) for participation in the study. Affirmative responses were received from 45 students. The participants had three to four years of playing experience on their wind or percussion instrument and were an average age of 12 years and 9 months. One child was eliminated from the study due to absences during the treatment sessions resulting in 44 participants.

Each participant received the three treatment sessions and completed four improvisation recordings over a 22-day period (see Table 3.1). The three treatment sessions, each lasting six days were: Treatment A – Introduction – improvisation instruction with no reflection, Treatment B – Collaboration – improvisation instruction with collaborative reflection and Treatment C – Maintenance – improvisational experiences with no reflection. Presentation order of the treatment sessions differed for each instruction group to control for order effect.

The Improvisation Achievement Measure, a researcher-designed assessment, was administered four times – once before the first treatment session and again following each subsequent treatment session. Each improvisation recording used for assessment contained a
four-measure phrase performed by the teacher/researcher followed by the participant’s improvised responding phrase. The teacher/researcher used four different prompts of equal difficulty, a different prompt for each of the four recordings.

Four judges, all instrumental music teachers with experience at the middle school level, evaluated the participants’ recordings for their improvisation achievement based on two dimensions – *Performance Skills* and *Creative Development*. These two dimensions contain two elements each: the *Performance Skills* dimension includes the elements of Tonal/Color and Rhythm/Duration and the *Creative Development* dimension includes Expressiveness and Form.

**Results**

The results indicated that it appears possible to teach seventh and eighth grade instrumental music students to improvise within the confines of a school music program. The achievement scores for all participants improved over the 22-day treatment period, which resulted in higher improvisation achievement scores than the entry-level scores for all groups. The influence of collaborative reflection on the scores appeared to vary depending on the instrument group and grade level. The improved improvisation achievement scores by the woodwind players in both grade levels could be attributed to the collaborative reflection among improviser, the improviser’s peers and the teacher. Even though the brass players’ and percussionists’ scores showed some improvement after the collaboration treatment, differences in their scores were greater after the maintenance session than the collaborative reflection session. The order of the presentation of the treatment sessions, however, did not appear to affect the scores of any group.

All eighth grade instrumentalists came into the study with higher improvisation achievement scores than their seventh grade counterparts. The higher entry scores may be due to
the eighth graders’ prior experience with improvisation in seventh grade or possibly the musical and psychological maturity of the added year. The eighth graders maintained this score advantage throughout the four IAM assessments.

Through a pairwise comparison of the two variables of grade and instrument group by treatment, the seventh graders had statistically significantly higher scores following the collaborative reflection sessions. The eighth graders mean scores did increase; however, the increase did not result in a statistically significant difference. In the same comparison the woodwind students had statistically significantly higher scores following collaborative reflection sessions while the brass/percussion students had statistically significantly higher scores following the maintenance session. Due to the small effect size of only 7% of the overall variance, these results may not be generalizable to the general population of middle school woodwind, brass and percussion students.

The nature of the talk between woodwind students and brass/percussion students appeared to be different. Whether within the large instruction group or in the small friend groups woodwind students tended to talk more about the use of the creative development elements of expression and form within their improvisational performances. Concerns about phrasing, tonal center and style were voiced frequently as well as discussion that used descriptive words such as “flowing” and “dancing.” Woodwind students also talked about comfort or lack of comfort with the improvisation process – what to do with wrong notes, ability to play more complicated music than they could read, and the joys and fears of spontaneity.

The brass and percussion students tended to talk about the technique and performance skills needed to improvise well. They encouraged each other to try unusual and non-traditional performance techniques such as rim clicks and alternative tone colors. The uses of articulate
words such as “pizzazz” or onomatopoeia such as “glissando” or “BOOM” were more frequent with this group than the woodwinds. The sharing of musical phrases through demonstrations and models were also a typical strategy for this group of students.

Members of all four groups used the word “conversation” when reflectively speaking about their improvisations and those of their peers. This may be a result of the teacher/researcher’s use of this term in describing the improvisation process. However, they specifically identified moments when the musical interaction of the group or pair resulted in a true musical conversation. Discussion about audiating – Gordon’s term for hearing the musical ideas in one’s head (2003) – before playing was often part of all of the groups’ collaborative reflection sessions.

Given the results of the analysis, the answers to the research questions were as follows:

**Research Question 1.** Is there a difference in the improvisation achievement scores of students when they participate in collaborative reflection during their improvisational experiences compared to when they do not participate in collaborative reflection?

There was an overall increase in the improvisation achievement scores of students when they participated in collaborative reflection during their improvisational experiences compared to when they do not participate in collaborative reflection.

**Research Question 2.** Is there a difference between the improvisation achievement scores of students based on grade, gender and instrument group?

The eighth grade students scored higher than seventh grade students throughout the four assessment administrations, possibly due to their previous experience with improvisational activities. The gender results were not reported due to extreme gender imbalances in the instrument groups. The woodwind students scored higher following the collaborative reflection
treatment sessions where as the brass/percussion students scored higher following the maintenance sessions.

**Research question 3.** What is the nature of the collaborative talk among the improviser, his or her peers and the teacher?

The collaborative talk resulted in discussions about the fears and joys of improvising, the freedom to create and spontaneity within an organized plan. The nature of the collaborative talk, however, was different by instrument group. Woodwind students tended to talk about the creative development elements of expression and form while the brass/percussion talked about technique and performance skills. Also the woodwind students tended to use descriptive words within their conversations while the brass/percussion students used articulate words.

**Discussion**

Can improvisation be “taught” (Hickey, 2009)? It appears for this group of middle school instrumentalists, it can. The approach used in this study – focusing on the process, including collaborative reflection, without emphasizing the product – resulted in improved improvisation scores for all of the participants in this middle school band program. The sequence of pedagogy, the focus on and repetition in improvisation strategies over several weeks also could contribute to the students’ increased improvisation skill. Further, allowing students the autonomy to direct their learning in large and small collaborative reflection groups within a safe learning environment resulted in findings similar to Green’s (2008) general music students. As in Green’s (2008) study, the student musicians appeared to refine their cooperation skills while advancing their musical skills.

Some of the participants seemed to benefit from the opportunity to collaboratively interact and reflect both verbally and musically. The teacher and the improviser’s peers within
both the large groups and small friend groups provided encouragement as well as productive criticism for the young creative musician. A traditional instrumental music experience typically contains feedback from the teacher only – a teacher-driven model. Webster (2003), Wiggins (1999) and Younker (2003) encouraged teacher feedback but with considerable caution. The young composer or improviser benefits from a teacher’s awareness of student autonomy so crucially needed for the creative process (Green, 2008; Wiggins, 1999).

Musical interaction within the large instruction groups was apparent as the recorded “collaborative emergence” (Sawyer, 2000) of their improvised performance became evident through reoccurring music themes and ideas. Small friend groups also held lengthy – 2 minutes or longer – musical conversations similar to those observed by Morgan et al. (2000). Little or no off-task talking was observed in the recorded sessions of the small friend groups within this study. This was comparable to the observations made by Miell and MacDonald (2000) in their study of friend pairs in a suburban middle school in the United Kingdom.

The addition of collaborative reflection within improvisation instruction may have value. There was a noticeable difference between students’ improvisation achievement mean scores as well as statistically significantly higher scores when participating in collaborative reflection as compared to times of no collaborative reflection. There is evidence that woodwind students may have benefited from the inclusion of collaborative reflection while the brass and percussion students were perhaps not dissuaded by its inclusion. Woodwind students produced statistically significantly higher achievement scores immediately after the collaborative reflection sessions while brass/percussion students produced statistically significantly higher scores following the maintenance sessions. Further, the collaborative reflection talk of woodwind students was decisively different than brass and percussion students.
The woodwind students’ affinity for collaborative reflection may be a result of instrument choice or possibly due to gender differences. The majority of both Woodwind groups were female. The issues related to gender are discussed later in the chapter (see page 86).

The instructional and assessment strategies used in this study may provide the instrumental music teacher with concrete models for application in the middle school setting. The inexperienced teacher/improviser may find direction and guidance by applying the instructional strategies used in this study including the collaborative reflection activities. These strategies may possibly fill the gap discussed by Byo (1999), Sarath (2002) and Strand (2006) caused by the teacher’s inexperience, self-doubt and lack of confidence.

**Enculturation factors.** The elements of the enculturation model of instruction: (a) creating a “culture of thinking,” (b) establishing a healthy learning environment free for exploration, (c) providing frequent opportunities for musical and verbal dialogue and (d) developing a vocabulary of sounds through modeling and demonstrating musical phrases and motives were used throughout all of the treatment strategies (Campbell, 2009; Green, 2008; Nettl, 1974; Perlmutter, 2010; Tishman et al, 1993).

There was an overall within-subjects’ improvement of the mean scores following the introductory session. One possible explanation for the increase in scores is the use of the enculturation model (Campbell, 2009). The basic elements of enculturation were evident early in the present study (see Appendix C). Creating a “culture of thinking” as well as an environment safe for risk may have assisted in the increase in improvisation achievement. During the present study, the improviser’s peers and not just the teacher often presented a musical model. The music interaction and conversation between peers also may have influenced the development of an improviser’s musical vocabulary.
**Student-directed learning within a community of learners.** A student-directed learning environment prevailed throughout the 18 days of treatment. The students guided, many times very skillfully, the group improvisations through a conversational mode of music making. The improviser and his or her peers interacted musically and verbally through collaborative reflection resulting in the sharing of musical ideas and motives.

The researcher/teacher designed broad overarching goals (Wiggins, 1999) for each treatment session. The students’ use of prior musical skills and understandings (Campbell, 2009) was evident at each session or improvisational activity. Each response within a trading fours activity became a musical and/or verbal acknowledgement and validation of the previous improviser’s creation; thus, becoming fuel for the next improviser’s response.

As to be expected there was minimal off-task talk during the large group instruction sessions, which may have been due to the participation and collaboration of the teacher/researcher. Similar to results found by Miell and MacDonald (2000), the small friend group collaborations in the present study also resulted in little or no off-task talk. Numerous friend groups produced continuous musical conversations that were two or more minutes in length. An informal analysis of these music conversations provided evidence of shared musical ideas and motives.

**Instrumentation.** It is possible that the Improvisation Achievement Measure (IAM) was more applicable to one instrument group over others. The percussionists’ scores were higher than the other instrument groups at the beginning of the study. The higher scores might have been due to a lack of strong ties by the adolescent percussionists to notation on the page. Perhaps these musicians more readily allow themselves the freedom to improvise without fear of failure or criticism. It is also possible that the assessment measure did not account for the subtle
changes of tonal/color and the added creative expressiveness used by the percussionists as they progressed to more intricate improvisations. While the pilot study judges felt that the criteria worksheet was equally valid for both wind and percussion groups and the correlation of their scores evidenced their agreement, the main study judges may have interpreted the criteria worksheet differently for the percussionist.

There was also disproportionate instrumentation in the Brass/Percussion groups. The Seventh Grade Brass/Percussion group had three brass players and eleven percussionists and the Eighth Grade Brass/Percussion group had three brass players and seven percussionists. The number of brass participants was small (n = 6) and consequently these observations cannot be generalized to the overall brass population. The researcher also observed discomfort and hesitation from the brass players when considering their participation in the study as well as when they continued into the improvisation process. This may have been due to personalities and self-confidence levels of this particular group of brass players or possibly from the tone production characteristics unique to brass playing. During their reflection time, the brass players discussed the difficulty of dealing with performing on the correct partial while improvising. Whereas the woodwinds have a more dependable fingering system that allows them to more accurately reproduce the pitches they are audiating, the brass players would at times miss the partial and struggle with reproducing the intended pitches. Missing the mark or partial could also be a result of the technique problems of inexperienced adolescent brass players.

**Gender.** The question of gender differences was dropped from the study due to extreme imbalances in each instrumentation group. Only one of the 24 Brass/Percussion participants was female; only 4 of the 20 Woodwind participants were male.
The gender imbalance within the groups, however, allows for some speculation on possible gender differences between the groups. The woodwind students had higher scores with collaborative reflection strategies than without reflective experiences. It is possible that the large number of female participants in the Woodwind groups may have influenced the results. The nature of the mostly female reflective talk in the Woodwind groups was distinctly different than the mostly male reflective talk within Brass/Percussion groups. It also appears that the reflective talk of the male woodwind students seemed more closely related to the male reflective talk in the Brass/percussion group. Demonstration and modeling was a typical characteristic of the male collaborative conversations. A small friend group of eighth grade male woodwind players included more demonstrating and modeling responses than their female counterparts.

Further, brass and percussion students appeared to improve their improvisation scores possibly due to practice and repetition – the process of performing – during the maintenance sessions. Closer observation of the reflective talk of the overwhelmingly male brass/percussion groups revealed the same musical talk – nonverbal – type of collaboration as the male woodwind students. Use of articulate words and models of musical phrases were noted in much of the brass/percussion reflective talk. Therefore, there may be a difference in the impact of collaboration between female and male adolescents. It may be possible that this style of collaborative reflection is not as effective in producing improved improvisation scores for males, but more effective for females.

Flowers (2006), girls were significantly less confident, more anxious and had less self-efficacy towards learning jazz improvisation than boys.

The reflective talk of the students in the present study was similar to forms of talk in Abramo’s (2011) study of high school students participating in a popular music class. Abramo’s participants wrote and performed original music in three same-gendered and two mixed gendered rock groups. He found that the boys “communicated through musical gestures” (p. 35) while the girls tended to “separate their verbal and musical communication ... to create clear delineated episodes of talking and playing” (p. 35). In addition, Abramo suggested that the past pedagogical practices in popular music instruction might alienate the girls due to a structure similar to the male-dominated rock processes used by many in the music classroom.

It may be possible that the talk-oriented reflection of the collaborative treatment sessions produced the opposite effect in the male participants of the present study. The collaboration mode of this study may be more beneficial for the woodwinds – a largely female-dominated group.

**Practice and fatigue effects.** The researcher observed what appeared as a change of approach by the students toward the improvisation assessment in each subsequent repetition of the IAM. It is possible that the change was due to a practice or fatigue effect from the repetition of the measure. As part of the protocol the researcher suggested a period of exploration within the assigned key before the presentation of each improvisation prompt. The period of exploration mirrored a similar instructional strategy used during the treatment sessions. Generally, participants used much less than the suggested full minute of exploration time in preparation for the call and response assignment for the IAM. The first and last recording session produced the least amount of exploration time. It is possible in the first session the
participants were unsure about what to play and in the last session, perhaps, the participants had self-assurance resulting from repeating this procedure three previous times.

**Researcher bias.** The differences in scores between Woodwind and Brass/Percussion groups may also be a result of the researcher’s primary instrument. As a clarinetist the researcher may have inadvertently influenced the woodwind students’ scores due to her familiarity with woodwind instruments or due to a difference in her presentation style during the treatment strategies. The researcher/teacher presented the call and echo/call and response phrases on an appropriate instrument for the instruction group; clarinet for the woodwind groups, baritone for the brass groups and various percussion instruments for percussion. The researcher did not find noticeable discrepancies in instructional strategies when reviewing her field notes; however, bias is not always easily observable by the offender.

**Treatment sessions.** The Collaborative Reflection treatment sessions appeared to be successful. All of the treatment groups improved their scores following the collaborative reflection session when compared to the Entry scores and those following the Introductory treatment session, although the scores were significantly different for only the Woodwind students. Field notes were used to assure accurate repetition of the instructional strategies for each treatment group. The difference in performance techniques for each instrument group particularly between the brass players and percussionists within the same treatment group may have caused inconsistencies in the participants’ understanding or experience with improvisational techniques. The researcher’s awareness of this possibly resulted in special attention towards alleviating any variations in instruction.

**Generalizability.** The generalizability of the results of this study to the total population of seventh and eighth grade instrumentalists is limited due to the convenience sampling of one
school setting and the small sample size. Nevertheless, the controlled treatment and testing conditions may compensate for some of these population validity issues. In addition, the treatment and testing environment were authentic to the typical instructional environment of an instrumental music setting possibly resulting in strong ecological validity. Attention was also given to internal validity by planning a research study that accounted for order effects within a repeated measure design.

Replication of the instructional strategies from the present study in hopes of improving improvisational achievement may be warranted; however, caution about assumptions of receiving similar results is recommended.

**Practical Implications for Music Education**

Students, regardless of what instrument they played, appeared to benefit from structured instructional strategies when learning to improvise. Some of the difficulty in teaching improvisation in the middle school instrumental music setting outside of the jazz idiom has been the lack of an accepted pedagogy for the adolescent improviser. Improvisation has not found a comfortable home in the instrumental music curriculum for every instrumental music student. The application of the instructional strategies used during the treatment sessions of this study may be the beginnings of the development of a teaching structure. The use of enculturation within a student-directed community of learners may benefit adolescent instrumentalists in their pursuit of music creation.

Students of the woodwind section may excel when given opportunities to collaborate with their peers and teacher as they work through the improvisation process. Musical and verbal discussion in large instruction groups as well as small friend groups may enhance the refinement of their creative products. Brass and percussion students may also profit from collaborative
efforts; however, the addition of repeated improvisational activities in many forms will more likely improve their improvisation achievement. The assessment of improvisational pieces may also augment the student’s learning experience. The analysis and value judgments placed on improvised pieces solidifies the improviser’s vocabulary and provides the refinement needed to improve their future performances.

For future use of the Improvisation Achievement rating scale, I would suggest changing the criteria labels in the Creative Development dimension in order to increase the effectiveness of the measure. The original labels of Ordinary (0) and Unique/Novel (5) may not appropriately identify the increments of the rating scale. Ordinary more accurately defines the average or mid-range of the scale while None or Random may more accurately define the low end of the rating scale. The evaluative use of the Expressiveness element within the Creative Development dimension may be improved by using the following labels: None (0), Ordinary (3) and Novel (5). The Form element may be improved by using: Random (0), Ordinary (3) and Unique (5).

**Recommendations for Further Research**

The design limitations and results of the present study prompt thoughts of further research on the effects of collaborative reflection on students’ improvisation achievement. It appears that collaboration may positively affect the improvisation achievement of middle school instrumentalists. In order to identify the finer details of the factors that cause the possible interactions between the collaborative reflection treatment, grade, gender and instrument group, the following suggestions for further research are proposed.

A larger sample size recruited from numerous schools would most likely benefit the effect size and consequently the generalizability of the results. The nature of classroom structure
and assigned classes within the school made the use of intact groups a necessary element of the present design. Eliminating this issue may increase the probability of more comprehensive results while also allowing for transferability to the population; however, the loss of ecological validity may not warrant the controlled instructional group structure.

Defining treatment groups by homogeneous instrumentation – woodwind, brass and separate percussion – would allow for a clearer understanding of the distinctions between students who select to play different instruments and their conversations during the collaborative reflection process. Do brass players differ from percussionists in improvisation achievement as a result of collaborative reflection time? Would separating the brass and percussion participants during the improvisation treatment sessions allow for more instrument specific instructional strategies thus resulting in a better understanding of the differences between the instrument groups?

Narrowing the study to two independent variables – treatment and instrument group – in order to accommodate a two-way analysis of variance could possibly identify the differences between specific factors within the instrument group. A more definitive understanding of the differences between the three factors – woodwind, brass and percussion – may provide insight for improved instruction and consequently improved improvisation achievement. Is the improvisation achievement of the three instrument groups affected differently by the use of collaborative reflection strategies?

Does gender play a role in achievement results? Due to the lack of female participants in the brass/percussion instrument group, analysis of the gender data was not completed. Repeating the study with balanced gender and instrument groups would most likely provide insightful results. The found differences between woodwind and brass/percussion instrument groups may
be a result of gender and not just instrument grouping since the majority of the Woodwind group was female (F = 16, M = 4) and the majority of the Brass/Percussion group was male (F = 1, M = 23).

A qualitative analysis of the participants’ musical and verbal interactions would provide a clearer picture of the nature of the talk used by the participants. The analysis through themes and codes could illuminate how woodwind, brass and percussionists and possibly females and males communicate differently when reflecting collaboratively.

The development of a concise well-researched pedagogy for improvisation with adolescent instrumentalists seems to be at the verge of its premiere. A meta-analysis of recent research studies involving improvisation may provide the data needed to develop the beginnings of an accepted plan of instruction for instrumental music students in their development as improvisers. The time seems suitable for the music education community to prepare and accept pedagogy for creating music improvisations with adolescent musicians as well as their teachers. The use of collaborative reflection within improvisation pedagogy may be justifiable.

Concluding Remarks

Improvisation achievement scores of seventh and eighth grade instrumentalists appear to improve with planned instructional strategies that include collaborative reflection time. Woodwind and Brass/Percussion students do appear to improve their achievement scores when using collaborative reflection within the improvisation process; however, the Brass/Percussion students appear to experience higher scores due to maintenance activities. The two groups also appear to communicate differently within a collaborative reflection setting.

The application of collaborative reflection to improvisation instructional strategies resulted in similar interactions – verbal and musical talk – between adolescent instrumental
students as their peers in the general music setting found in Miell & MacDonald (2000) and Morgan, et al. (2000). Both groups – instrumental and general students – used musical and verbal talk to communicate about the process and product of their improvisations. The majority of both groups when working with friends had little or no off-task talk and produced long periods of continuous musical interactions.

This study adds to the lean collection of improvisation studies designed for adolescent instrumental students. It also provides much needed strategies for improvisation with all instrumentalists not just young jazz musicians possibly offering a component to further assist the development of meaningful improvisation pedagogy for all adolescent instrumentalists. Overall adolescent instrumental music students appear to benefit from collaborative reflection in well-planned instructional strategies for improvisation.
REFERENCES


Beitler, N. S. (2007, May). *Spontaneity or structure: Creative activities in the instrumental music setting*. Graduate student forum presentation at the meeting of Instrumental Music Teacher Educators Colloquium, Deer Creek, OH.


http://www.portal.state.pa.us/portal/server.pt/community/enrollment/7407/public_school_enrollment_reports/620541


http://www.portal.state.pa.us/portal/server.pt/community/national_school_lunch/7487


http://search.proquest.com/docview/303873708?accountid=13158


Music Educators National Conference (pp. 188-198). Oxford, NY: Oxford University
Press.


Sawyer, R. K. (2000). Improvisational cultures: Collaborative emergence and creativity in 
improvisation. Mind, Culture, and Activity, 7(3), 180-185.

Research, 47,50-59. doi:10.1016/j.ijer.2007.11.004

 improvisation and number 4, composition on high school band instruction in New York 
State. Retrieved from ProQuest Dissertations and Theses database 
http://search.proquest.com/docview/305361987?accountid=13158

Siegrist, L. A. M. (2010, March 4-6). A narrative journey through the landscape of Reggio 
Emilia. Paper presented at the Educating the creative mind: Developing capacities for the 
future, Kean University, Union, NJ.

doi:10.1177/0022429409343549

doi:10.1177/002242940605400206

Stringham, D.A. Improvisation and composition in high school instrumental curriculum 
(Doctoral dissertation). Retrieved from ProQuest Dissertation and Theses database


Webster, P. R. (2002). Creative thinking in music: Advancing a model. In T. Sullivan & L. Willingham (Eds.), *Creativity and music education* (pp. 16-34). Toronto, ON, Canada: Canadian Music Educators' Association.


APPENDIX A

Script for the Invitation of Students to the Research Study
APPENDIX A

Script for the Invitation of Students to the Research Study

Hello! As part of my doctoral studies in Music Education at Penn State University, I have developed a research project that focuses on music improvisation with middle school instrumental music students.

Part of being a complete and independent musician is not only performing other people’s music but also developing the techniques to create your own music through composition and improvisation. These two creative activities are important elements of the National Arts Standards, the Pennsylvania Arts Standards and the middle school instrumental music curriculum at Southern Lehigh School District. Students in the SLMS Concert Band create their own compositions and improvisations as part of the band mini-course. Also music students reflect on their creative performances and those of their peers through personal journal entries and class discussion. This reflective time is used to perfect and refine the techniques needed for creative activities.

A description of the project:

This project will examine the effect of reflection on your ability to improvise. The instruction for improvisation will be presented in the same manner as it has been in the past. Some students will reflect on their improvisations with their classmates and some will reflect through personal journal entries. Both of these reflection styles are part of the normal instrumental music instruction at the middle school.

I would like to have 60 students participate in the project. Thirty students will reflect on their improvisations with their classmates and 30 will reflect using personal journal entries only.

What will the instruction for improvisation require you to do?

All middle school band students receive instruction in improvisation as part of the normal band curriculum. This instruction will take place during six 20-minute sessions in the band mini course. This instruction includes time to explore musical ideas, perform as group and individually and reflect on those performances.

What will audio-recorded improvisations require you to do?

Individual recordings of student’s improvisations will be done three times during the project – once at the beginning of the first mini (36 day) course and twice at the end of the
improvisation instruction. Individual improvisations are a normal part of instruction for improvisation at Southern Lehigh Middle School. You will play your recorded improvisations for me; no one else will be in the room when the recording is done.

The recordings will not reveal your name, the school’s name or where we live. I will assign a random number and letter to your recording. I will refer to your recording by the number and letter when reporting the results of the project.

Two music teachers will assess these recordings to hear if you have improved in your ability to improvise. These teachers do not teach in Southern Lehigh School District and most likely do not know you. These scores will be used for the research project only. As in the past you will receive a pass/fail grade for this activity; you will pass if you improvise in any form or manner and fail only if they do not improvise at all. If you are uncomfortable improvising in front of their classmates, opportunities to play for only me will be made available. At no time will your performance ability affect their final grade for the mini-course.

*What will the audio-recorded reflection discussions require you to do?*

Audio recordings of class reflection times will be made to document comments made by you and their classmates. The reflection discussions are a normal part of the instruction for improvisation at Southern Lehigh Middle School. I will type, word for word, what is said during the reflection time. This is called a transcript. I will give you a copy of the transcript. You may make any necessary changes. It is important to me that I understand what you want to say, so your changes to the transcript are fine.

The transcript will not reveal your name, the school’s name or where we live. I will choose a pseudonym – a fake name – for you. I will refer to you by your pseudonym when reporting the results of the project.

*What will the personal journal entries require you to do?*

You will receive a music journal for use throughout the entire school year. You will use this to write your personal journal entries about the improvisation process as well as many other projects throughout the year. This is a normal part of instruction in improvisation at Southern Lehigh Middle School.

The journal entries I use in the study will not reveal your name, the school’s name or where we live. I will choose a pseudonym – a fake name – for you. I will refer to you by your pseudonym when reporting the results of the project.
What do I do if I want to participate in the research project?

If you chose to participate in the project, the total time involved will be approximately 135 minutes or 2 hours and 15 minutes. This includes the improvisation instruction, reflection time and audio recordings. Since this is part of the normal band instruction, all of this time takes place in the normal school day and all Southern Lehigh Middle School band students will take part in the instruction.

Is anyone interested in a packet with information about the project? The packet includes everything I have said today and all the necessary permission forms. Please return the signed forms to me by September 8, 2011.

What if I do not want to participate in the project?

Since the instruction in improvisation is part of the normal band curriculum you will need to participate in all of the improvisation activities. HOWEVER, the results of your recorded improvisations will not be used in the project. Any comments you make in class reflection discussions will immediately be removed from the archived recordings and your comments will not be included in the transcriptions.

You are not obligated to participate and you will not disappoint me if you chose to turn down the invitation. You can withdraw from the project at any time without penalty.

Dr. Donahue and the Southern Lehigh School Board have approved this project. Upon completion, a copy of my dissertation manuscript can be obtained from Dr. Donahue’s office. Improvisation is important part of music-making. My hope is that this project will help me and other music teachers to improve our instruction in this area.

Thank you very much for your time! Please feel free to contact me at any time with questions or concerns.

Nancy Beitler
beitlern@slsd.org
(610)282-3700  x-6155
APPENDIX B

Student Assent/Parental Consent Form
APPENDIX B

Student Assent/Parental Consent Form

Informed Consent Form for Social Science Research
The Pennsylvania State University

Title of Project: The Effects of Collaborative Reflection on the Improvisation Achievement of Seventh and Eighth Grade Instrumental Music Students

Principal Investigator: Nancy S. Beitler
Graduate Student in the School of Music
The Pennsylvania State University
Southern Lehigh Middle School
3715 Preston Lane
Center Valley, PA 18034
beitlern@slsd.org
(610)282-3700 x-6155

Advisor: Dr. Linda Thornton
The Pennsylvania State University
School of Music
208 Music Building I
University Park, PA 16802
lct12@psu.edu
(814)863-5723

1. Purpose of the Study: The purpose of this study is to see if discussing or writing about your improvisations changes the improvisations you create. It is hoped that the thoughts and reactions of your classmates will help you produce better music.

2. Procedures to be followed: You will be asked to participate in some improvisation exercises during band classes. These sessions are part of the normal band program at the middle school. As part of these sessions you will discuss the process of improvising with your classmates and your teacher. Mrs. Beitler will be recording your discussion and your playing as part of a research study.

3. Duration/Time: There will be six 20-minute instructional sessions in improvisation and three 5-minute audio recording sessions. Your participation will take 135 minutes or 2 hours and 15 minutes.
4. **Discomforts or risks:** You may not always feel like improvising in front of your classmates; however, classroom improvisation is a required element in the normal course for middle school band. All recordings will be done in one-on-one sessions with Mrs. Beitler. Your classmates will not hear your recorded improvisations.

5. **Benefits:** You might gain confidence and skill in your improvisational performance due to discussing and writing with your teacher and classmates. Other music teachers might use these same ideas to instruct and encourage their students.

6. **Audio Recordings:** All of the recorded improvisations will be saved in a password-protected file. By December 2011 the recordings will be transferred to a Secure Digital (SD) memory card and stored in a locked filing cabinet. At this time the original recordings will be destroyed. Only Mrs. Beitler will have access to these recordings, SD memory card and files.

7. **Use of audio recordings:** Check the appropriate lines, one for each topic. You should have three check marks when you are done.

**Use for conference presentations:**

- [ ] I agree that parts of my improvisation or reflection recordings may be used for conference presentations.
- [ ] I do not agree that parts of my recordings may be used for conference presentations.

**Use for education and training:**

- [ ] I agree that parts of my recordings may be used for education and training of future researchers/teachers.
- [ ] I do not agree that parts of my recordings may be used for education and training of future researchers/teachers.

**Use for future research:**

- [ ] I permit my recordings to be kept for possible future research in music education. All identifying marks and codes will be removed from the recordings. Mrs. Beitler will be the only researcher with access to the recordings.
- [ ] I do not permit my recordings to be kept for possible future use. The recordings should be destroyed after three years of research storage in June of 2014.

8. **Statement of Confidentiality:** Your participation in this research is confidential. The audio recordings and all data will be stored and secured at Mrs. Beitler home office on a Secure Digital (SD) memory card in a locked filing cabinet. If the information from the research is published or presented at a conference, your name will not be shared. Code numbers and letters will identify all recordings and data. Use of pseudonyms – fake names – will be used in all written and verbal presentations of the research.
The Pennsylvania State University’s Office for Research Protections, the Institutional Review Board and the Office for Human Research Protections in the Department of Health and Human Services may review records related to this research study.

9. **Right to Ask Questions:** Please contact Nancy Beitler at (610) 282-3700 x-6155 with questions or concerns about this study.

If you have any questions, concerns, and problems about your rights as a research participant or would like to offer input, please contact The Pennsylvania State University’s Office for Research Protections (ORP) at (814) 865-1775. The ORP cannot answer questions about research procedures. The researcher can answer questions about research procedures.

10. **Voluntary Participation:** Your decision to be in this research is voluntary. You can stop at any time. You do not have to answer any questions you do not want to answer. Deciding to not take part in or quitting the study will involve no penalty.

You will be given a copy of this form for your records.

If you agree to take part in this research study and the information outlined above, please sign your name and indicate the date below.

_________________________________________  _____________________
Participant Assent Signature      Date

_________________________________________
Print your name clearly

I give permission for my child, ____________________, to participate in this research study.

_________________________________________  _____________________
Parental Consent Signature      Date

_________________________________________
Print your name clearly

_________________________________________  _____________________
Person Obtaining Consent      Date
APPENDIX C

Improvisation Instruction Session
## APPENDIX C
Improvisation Instruction Sessions
for wind and pitched percussion instruments

<table>
<thead>
<tr>
<th>Days</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
</table>
| **Treatment A**  
Instruction  
No reflection  
(10 minute sessions) | 1) Brother John by ear in the key of concert Bb  
2) Add a bass line  
3) explore basic rhythmic ideas  
4) improvise rhythms on the bass line | 1) Brother John in Bb with improv bass line on Sol & Do  
2) add rests and articulations  
3) Same thing in the key of concert Eb | 1) Call and echo (C/E) sung and played in Bb using four beat patterns in: D, D-R-M, D-S-D, D-T-D  
2) use basic rhythmic pattern & syncopation | 1) C/E sung and played review patterns in Bb  
2) C/R as a group  
3) Exploration time/sketch ideas  
4) Individuals volunteer for C/R with teacher | 1) C/E played using all previous elements plus dynamic contrast  
2) C/R to review all previous elements |
| **Treatment B**  
Instruction  
Collaborative Reflection  
(20 minute sessions – 10 min. for instruction and 10 min. for Collaboration) | 1) Review concert Eb major scale  
2) C/E in key of Eb patterns: D-R-M, D-T-D, D-S-D  
3) Add basic rhythms & syncopation  
4) C/R as a group | 1) C/E patterns of chordal patterns: D-M-S & F-R-T-S  
2) explore and sketch ideas  
3) C/R as group  
4) Review adding rests | 1) C/E in previous patterns plus neighboring & passing tones  
2) Trading fours – thinking/play in phrases  
3) Trading fours with a friend | 1) C/E patterns using . in Eb patterns  
2) C/R review dynamic & articulations  
3) review phrasing/cadence  
4) Trading fours with a friend | 1) C/R using all previous elements in Bb  
2) Exploration time  
3) Entire class trading fours – all students soloing |
| Reflection Prompt  
#1 & 2  
**Large group** reflection discussion & exploration | Reflection Prompt  
#2 & 3  
**Large group** reflection discussion & exploration | Reflection Prompt  
#2 & 3  
**Friend group** reflection discussion & exploration | Reflection Prompt  
#2 & 4  
**Friend group** reflection discussion & exploration | Reflection Prompt  
#2 & 4  
**Friend group** reflection discussion & exploration | Reflection Prompt  
#2 & 5  
**Large group** reflection discussion & exploration |
<table>
<thead>
<tr>
<th>Days</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Treatment C</strong>&lt;br&gt; Maintenance&lt;br&gt; No reflection&lt;br&gt; (10 minute sessions)</td>
<td>1) Improvise rhythms on the assigned major scale; encourage the use of rests</td>
<td>1) Improvise accents on a given eighth note pattern</td>
<td>1) C/E patterns imitating presented articulations and dynamics</td>
<td>1) Review of articulations – improvise articulations to Yankee Doodle</td>
<td>1) C/E using rhythm patterns: $7^{th}$ gr. - $\text{♩}$&lt;br&gt; $8^{th}$ gr. - $\text{♩}$ triplets</td>
<td>1) Improvise rhythms on the assigned minor scale encourage the use of rests and articulations</td>
</tr>
</tbody>
</table>

C/E = Call and Echo  
C/R = Call and Response  
Trading Fours = one individual plays four measures (phrase) and another individual plays the next four measures etc.
## Appendix C continued
Improvisation Instruction Sessions
for the non-pitched percussion

<table>
<thead>
<tr>
<th>Days</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Treatment A</strong>&lt;br&gt;Instruction&lt;br&gt;No reflection&lt;br&gt;(10 minute sessions)</td>
<td>1) Play the melodic rhythm of Brother John&lt;br&gt;2) Add bass drum line on beat 1 &amp; 3&lt;br&gt;3) explore basic rhythmic variations &amp; ideas&lt;br&gt;4) improvise rhythms on bass drum line.</td>
<td>1) Play Brother John melodic rhythm and bass line with improv ideas&lt;br&gt;2) add rests and accents</td>
<td>1) Call and Echo (C/E) using basic rhythmic patterns &amp; ‌‌syncopation&lt;br&gt;2) Add two or more colors through use of more than one instrument&lt;br&gt;3) add rests &amp; accents&lt;br&gt;4) Explore and sketch ideas</td>
<td>1) C/E using more than one instrument sound such as bass, snare &amp; cymbals&lt;br&gt;2) C/R using ‌‌syncopation&lt;br&gt;3) add rests &amp; accents&lt;br&gt;4) Explore and sketch ideas</td>
<td>1) C/E sung and played&lt;br&gt;2) C/R as group&lt;br&gt;3) Exploration time &amp; sketch ideas&lt;br&gt;4) Individuals volunteer for C/R with teacher</td>
<td>1) C/E played using all previous elements plus dynamic contrasts&lt;br&gt;2) C/R to review all previous elements</td>
</tr>
<tr>
<td><strong>Treatment B</strong>&lt;br&gt;Instruction&lt;br&gt;Collaborative Reflection&lt;br&gt;(20 minute sessions – 10 min. for instruction and 10 min. for Collaboration)</td>
<td>1) C/E basic instrumentation - colors&lt;br&gt;2) Add new colors – conga, djembe and other hand drums&lt;br&gt;3) Add ‌‌syncopation</td>
<td>1) C/E patterns&lt;br&gt;2) add non-traditional and alternative techniques&lt;br&gt;2) explore and sketch ideas&lt;br&gt;3) C/R as group&lt;br&gt;4) Review adding rests</td>
<td>1) C/E using previous basic rhythm patterns and non-traditional tech.&lt;br&gt;2) Trading fours – thinking/play phrases/cadences&lt;br&gt;3) Trading fours with a friend</td>
<td>1) C/E patterns using ‌‌. And basic rhythms&lt;br&gt;2) C/R patterns include accents, dynamics, colors&lt;br&gt;3) review phrasing/cadence&lt;br&gt;4) Trading fours with a friend</td>
<td>1) C/E review ‌‌. patterns&lt;br&gt;2) explore and sketch ideas&lt;br&gt;3) C/R as group&lt;br&gt;4) Work with a friend to prepare to solo a four measure phrase</td>
<td>C/R using previous elements&lt;br&gt;2) Exploration time&lt;br&gt;3) Entire class trading fours – all students soloing.</td>
</tr>
<tr>
<td>Writing Prompt #1 &amp; 2&lt;br&gt;Large group reflection discussion &amp; exploration</td>
<td>Reflection Prompt #2 &amp; 3&lt;br&gt;Large group reflection discussion &amp; exploration</td>
<td>Reflection Prompt #2 &amp; 3&lt;br&gt;Friend group reflection discussion &amp; exploration</td>
<td>Reflection Prompt #2 &amp; 4&lt;br&gt;Friend group reflection discussion &amp; exploration</td>
<td>Reflection Prompt #2 &amp; 4&lt;br&gt;Friend group reflection discussion &amp; exploration</td>
<td>Writing Prompt #2 &amp; 5&lt;br&gt;Large group reflection discussion &amp; exploration</td>
<td></td>
</tr>
<tr>
<td>Days</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>------</td>
<td>------------------------</td>
<td>------------------------</td>
<td>------------------------</td>
<td>------------------------</td>
<td>------------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td></td>
<td><strong>Treatment C</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Maintenance</td>
<td>No reflection</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(10 minute sessions)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1) Improvise rhythms on the assigned warm-up pattern; encourage the use of rests</td>
<td>1) Improvise accents on a given eighth note pattern</td>
<td>1) C/E patterns imitating presented accents and dynamic changes</td>
<td>1) Review of articulations – improvise accents to the melodic rhythm of Yankee Doodle</td>
<td>1) C/E using rhythm patterns: 7&lt;sup&gt;th&lt;/sup&gt; gr. - ♩ 8&lt;sup&gt;th&lt;/sup&gt; gr. - ♐ triplets</td>
<td>1) Improvise rhythms on the assigned warm-up pattern; encourage the use of rests and accents</td>
</tr>
</tbody>
</table>
APPENDIX D

Improvisation Prompts
APPENDIX D

Improvisational Prompts

Prompt A: Pitched

Prompt A: Non-pitched

Prompt B: Pitched
Appendix D continued

Improvisational Prompts

Prompt B: Non-pitched

Prompt C: Pitched

Prompt C: Non-pitched
Appendix D continued

Improvisational Prompts

Prompt D: Pitched

Prompt D: Non-pitched
APPENDIX E

Improvisation Criteria Worksheet
## APPENDIX E

### Improvisation Criteria Worksheet

<table>
<thead>
<tr>
<th>Performance Skills</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tonal/Color</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performs using only one pitch or color with no sense of tonal center or color scheme; sounds dull and random</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lacks tonal or color organization; sounds random and arbitrary</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performs a variety of pitches or colors that are not clearly organized around a tonal center or color scheme</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performs with some repetition of pitches or patterns but uses a loose or vague melodic line</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performs using basic organization of pitches (scale and/or chordal) or patterns of colors</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performs with some repetition of pitches or patterns but uses a loose or vague melodic line</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performs using basic organization of pitches (scale and/or chordal) or patterns of colors</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performs with an obvious tonal center or organized scheme of colors</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performs applying devices such as sequences, embellishments and variations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performs applying devices such as sequences, embellishments and variations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performs with complex and purposeful accidentals or color variations (possibly including non-conventional sounds) for imaginative interest</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Rhythm/Duration</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performs all sounds the same length (duration) with no evidence of rhythmic organization</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performs with no sense of steady beat (pulse) or meter; random and sporadic pulse</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performs without use of silence (continuous sound)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performs with sounds of varying lengths (durations) but with little evidence of rhythmic organization</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performs with a vague awareness of beat (pulse) or meter</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performs with seemingly unintentional and random silences</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performs with an obvious tonal center or organized scheme of colors</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performs with purposeful use of more advanced rhythms such as uneven (dotted) and syncopated rhythms</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performs with steady beat (pulse) and use of uncommon or mixed meters in complex ways</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performs with interesting and daring use of sound and silence</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Creative Development</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No use of musical dialogue or interaction with other performers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No use of varied volume levels; all sounds have the same dynamic level</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No use of articulations; all sounds start and end in the same way</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vague awareness of other performers evidenced by slight interaction</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ordinary use of dynamic contrast; may not be purposeful</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ordinary use of articulations; may not be purposeful</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some creative dialogue and interaction with other performers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some organized use of dynamic contrast</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some organized use of articulations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Obvious use of creative dialogue and interaction with other performers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Creative use of dynamic contrast</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Creative use of a variety of articulations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extensively unique and novel use of music dialogue with embellished and borrowed ideas</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extensively unique use of purposeful dynamic contrast</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extensively novel use of interesting articulations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Form</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No recognizable cadential beginning and/or ending</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No use of structure or phrasing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vague attempt at a cadential beginning and ending</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apparent attempts at some ordinary repetition of phrases or musical ideas</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clear cadential beginning and ending with an awareness of a harmonic structure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evidence of repetition and contrast of phrases or musical ideas</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sensitive use of cadential context through traditional use of tension and release</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Creative use of advanced devices within a obvious form structure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unique use of cadential context including use of unusual tension and release techniques</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Creative use of unique and novel structures and forms</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX F

Improvisation Achievement Measure
APPENDIX F

Improvisation Achievement Measure

Student # _________ Date _________ Judge ___________________________

Performance Skills
Tonal/Color:

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Random</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complex</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Rhythm:

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Random</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complex</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Creative Development
Expressiveness:

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ordinary</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unique/Novel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Form:

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ordinary</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unique/Novel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Researher use only

Score for Performance Skills ______ Score for Creative Development ______ Total Score for All Dimensions ______
APPENDIX G

Protocol for Recording
APPENDIX G

Protocol for Recording

1. “Hello, (participant’s name).”

2. “Today we will create an improvisation based on a four-measure phrase. I will play a four-measure phrase and immediately following my phrase you will play an appropriate responding phrase.”

3. Wind players only: “We will be performing in the key of Concert Bb (or Eb) major.”
   Percussionists only: “We will be performing with any instrument or combination of instruments available here.”

4. Wind players only: “Explore the notes of the key signature for possible use in your improvisation.”
   Percussionists only: “Explore the colors of the available percussion instruments for possible use in your improvisation.”
   (Allow up to 1 minute for exploration time and then proceed)

5. “Good. I will now audio record your improvisation. I will play a four-measure phrase and immediately following my phrase you will play an appropriate responding phrase.”

6. “Do you have any questions?”

7. “After I push the record button we will begin.” RECORD THE IMPROVISATION

8. “Thank you. You may return to class.”
APPENDIX H

Instruction for the Judges
APPENDIX H

Instructions for the Judges

In preparation for evaluating the students’ improvisations, review the *Improvisation Criteria Worksheet*. Review each element and its criteria carefully. Compare the criteria worksheet to the *Improvisation Achievement Measure* (other side of the page). There are two dimensions – Performance Skills and Creative Development. Within each dimension there are two elements: *Performance Skills*, which includes Tonal/Color and Rhythm and *Creative Development*, which includes Expressiveness and Form. Please use the following procedures to evaluate each student’s improvisation:

1. Fill in the student number and letter, date and your name.
2. Listen to the entire recorded submission – a four-measure phrase played by the researcher followed by a student response.
3. Listen to the submission again and rate the student response for **Performance Skills only**. Use the criteria worksheet to check the appropriate criteria heard in each element. Immediately turn the form over and place an X on the line to represent the overall rating for each element of the *Performance Skills*.
4. Listen to the submission again and now rate it for **Creative Development only**. Use the criteria worksheet to check the appropriate criteria for each element. Immediately turn the form over and place an X on the line to represent the overall rating for each element of the *Creative Development*.
5. Listen to each submission no more than three times total.
6. Do not total your scores or mark the area labeled *for researcher use only*.

If you have questions, do not hesitate to ask the researcher for clarification.

Nancy Beitler - nsb132@psu.edu or (610)285-2202
VITA

Nancy S. Beitler

Academic Preparation

2012  Doctor of Philosophy in Music Education
      The Pennsylvania State University, University Park, PA
1980  Master of Music Education
      West Chester State University, West Chester, PA
1975  Bachelor of Science in Music Education
      West Chester State University, West Chester, PA

Professional Experience

2000 – present  Instrumental Music Instructor
      Southern Lehigh Middle School, Center Valley, PA
2006 – 2007  Graduate Teaching Assistant in Music Education
      The Pennsylvania State University, University Park, PA
1995 – 2000  Instrumental Music Instructor
      Parkland Elementary Schools, Allentown, PA

Scholarly Publications and Presentations

2012, April  Conversational Improvisation: Collaboration between improviser, peers
             and teacher. Research to Practice Presentation, Pennsylvania Music Educators
             Association (PMEA), Annual In-Service Conference, Lancaster, PA
2012, March  The effects of collaborative reflection on the improvisation achievement
             of seventh and eighth grade instrumental music students. Research-in-
             Progress Poster, National Association for Music Educators (NAfME), Biennial
             National Conference, St. Louis, MO

Collaborative reflection: A deeper understanding of the reflective
practices of middle school teachers

2011, March  Research Presentation, Music Educators National Conference (MENC),
             Eastern Division, Biennial In-Service Conference, Baltimore, MD
2010, March  Research-in-Progress Poster, MENC, Biennial National Conference on
             Research in Music Education and Music Teacher Education, Anaheim, CA.
2010  Enhancing the instrumental music program with creativity. (Linda
      Thornton, co-author). Alternative Approaches in Music Education: Case
      Littlefield.

2007  Reflective practice in a middle school instrumental setting.
      Education, 173, 55-70.

Awards and Honors

2011 – present  Pi Kappa Lambda, National Music Honor Society, Zeta Iota chapter
2008, July-August  Visiting Scholar, Northwestern University, Evanston, IL
2006 – 2007  Teaching Assistantship, The Pennsylvania State University, PA
2005  Citation of Excellence, Pennsylvania Music Educators Association, District 10