

ABSTRACT

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THE EFFECTS OF GENDER AND GRADE LEVEL ON THE COMPOSITIONAL PROCESSES OF SIXTH, SEVENTH, AND EIGHTH GRADE STUDENTS.

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The purpose of this study was to examine the effects of grade level and gender on the amount of time early adolescents spent on selected compositional processes (exploration, repetition, development, and silence). This study serves as an extension of the Kratus (1989) study that examined the compositional processes used by 7, 9, and 11-year-olds. For this study, 30 students in grades 6, 7, and 8 were given 10 minutes to compose a piece of music on an electronic keyboard. Following the composition time, students were asked to play their compositions two times in a row. The time spent on the compositional processes of exploration, development, repetition, and silence was analyzed quantitatively by the researcher and two independent judges. Analysis showed no significant relationships between grade level and the use of compositional processes. No gender differences were found, and all students in grades 6-8 were able create a composition to some degree. Although no significant main effects were observed, analysis of the mean time spent on the process of development indicates that a trend may exist in which older students spend more time developing ideas than younger students.

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PROCESSES OF SIXTH, SEVENTH, AND EIGHTH GRADE STUDENTS.

by

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The Effects of Gender and Grade Level on the Compositional Processes of Sixth, Seventh, and Eighth Grade Students

Chapter 1: Introduction

Introduction and Background

“It is the most natural thing for a human being to make up music” (Paynter, 2000, p. 6).

This study was conducted as a direct result of my personal curiosity about how students compose music. During my second year of teaching, I attended a session at a Music Educators National Conference convention concerning composition and the music classroom. During the session, the presenter played audio clips of music his students performed. At the end of the session, we were handed a book filled with compositions written by each of his students. I was amazed at the high level of writing I observed. When I decided to attend this seminar, I expected to see and hear things similar to standard childhood songs, but instead I heard melodies and harmonies that clearly surpassed my expectations. I wondered how these children were able to attain these abilities. The presenter answered my question at the end of his seminar by saying that the students were able to accomplish this because someone told them they could and they believed it. I considered this idea and reflected on my own experiences in school. I had no recollection of anyone ever telling me that I could write music or that writing music was an important part of being a musician, yet I had been writing and arranging music since I was an adolescent. I then wondered how my composition abilities would be different had I experienced more music writing activities as a child. Although there was no way for me to know the

exact answer to this question, I could explore it further by incorporating composition into my own classroom and examining the possible effects on my students.

Later, in the Spring of 2005, I made the decision to perform original songs, written by the students, for our spring concert. Each grade level, K-8, would write a song to sing for the school concert. Due to their lack of development the students would need guidance, but I wanted the songs to consist of as many of their ideas as possible. As I began, I quickly found that I was unsure of the process of teaching composition. Some teaching strategies resulted in confusion, frustration, or boredom while others proved ineffective for the students and me. An example of this occurred while I was trying to help the students decide on a chord progression for their song. I would play a few examples for them to see what they liked the best, but the variety of preferences and the lack of understanding of harmony and chords made this process quite challenging. After my first few attempts at teaching composition, I realized a disconnect between my compositional processes and those of my students. However, after a period of trial and error, I started to witness positive results and the compositions began to develop. That spring, we performed our original songs and I was pleased with the compositional progress my students demonstrated. I noticed that the students displayed ownership of “their” songs and were excited to present them to a live audience. Parents seemed surprised at the unrealized capabilities of their own children. This experience of teaching composition codified my belief that compositional practices in the classroom can be meaningful.

Over the past few years, I realized that my initial attempts at teaching students to compose have been somewhat unstructured due to a lack of knowledge,

experience, and resources. Furthermore, recent graduate study has made me better aware of the practice of teaching composition to students by becoming familiar with resources and research studies that explore the topic. One study by Kratus (1989) in particular proved relevant to my interest. The work investigated the compositional processes of children ages 7, 9, and 11 and advocated for the use of a rigid framework for students when implementing composition in the classroom. My personal interest in composition and the work of Kratus eventually led to this present study which will extend the work and examine the compositional processes of early adolescents.

Need for the Study

Recent and past trends in music education promote the inclusion of creative activities in the classroom. First, methodologies like Orff and Dalcroze are widely used in elementary classrooms and focus on improvisation and composition activities. Second, movements like Comprehensive Musicianship, the Contemporary Music Project, and the Manhattanville Music Project underscore the importance of classroom-based composition activities. Third, the *National Standards for Arts Education* (Music Educators National Conference, 1994) includes composition as one of nine content standards for K-12 music education. The fourth standard encourages teachers to implement composition by using, “a wide variety of traditional and non-traditional sound sources and electronic media when composing and arranging” (p. 43).

Although current trends in music education encourage the use of composition in the music classroom, a lack of understanding of composition and the compositional process has led many teachers to rarely include it or leave it out of their teaching

completely (Kennedy, 2002; Reid, 2002; Strand, 2006). Henry (1996) and Morin (2002) both describe a gap between philosophy and practice when it comes to integrating composition in the classroom. They posit that current philosophies and curriculum guidelines like the National Standards contradict what is really occurring in the classroom. Studies by researchers such as Berkley (2004), Burnard (2000), Kratus (1985), and Strand (2006), recognize this quandary and examine the compositional processes of children in an effort to make critical connections between research and practice. These connections may assist in developing compositional aims, goals, and objectives appropriate for students of various age levels.

This study adds to the growing body of literature examining the compositional processes and products of students in the classroom setting. Kratus (1989) calls for further investigation of the compositional processes of children in his study that examined the compositional processes of children ages 7, 9, and 11. The students in Kratus's study were recorded while they composed a short piece at an electronic keyboard. Data were then analyzed to determine the amount of time participants spent on exploration, repetition, development and silence and found that younger children explored more than older children and older children spent more time on melodic repetition. In an effort to develop an informed pedagogy of composition and effective teaching strategies for teachers to implement in the classroom, Kratus calls for further research on these processes.

Other researchers (Henry, 1995; Hickey, 1992; Webster, 2002) have called for a study of the compositional processes of early adolescents, because most existing research has focused on children or adults. Gathering data from this age group of

adolescents will allow for comparisons between the compositional processes of different age levels and give researchers a larger picture to work with as they examine compositional development from early childhood to adulthood.

Purpose and Research Questions

The purpose of this study was to examine the effects of gender and grade level on the amount of time early adolescents spent on selected compositional processes (exploration, repetition, development, and silence). This study replicated and built upon previous work by Kratus (1989) who examined similar variables with 7, 9, and 11-year-olds.

Adolescent Creative Development

Analyzing the compositional processes of early adolescents requires a working knowledge of adolescent cognitive development and its relationship to creativity. It has been demonstrated by researchers that adolescents of the age group involved with this study differ in their creative abilities from the younger age group that participated in the Kratus study (Carlin, 1997; Flohr, 1979; Hickey, 1992). The U-shaped theory of creative development indicates high levels of creativity are present in early childhood and adulthood, but a creative slump occurs somewhere between these two stages, possibly during adolescence (Davis, 1991). Research advocating this theory suggests that as children reach a certain age (usually between 9 and 12) they are less creative than when they were younger. Later in adulthood, the level of creativity increases. One reason for this slump is that the thoughts of these children may be more concrete and literal rather than abstract (Davis, 1991). Concrete thoughts can be associated with the desire to conform to established patterns rather

than the desire to demonstrate original ideas and diversity (1991). Children who conform to established patterns would seem to be less creative than children who break away from those patterns and demonstrate originality.

Piaget supports the idea that early adolescent thought processes are concrete and literal, but he does not promote or reject the idea of a creative slump between childhood and adulthood (Santrock, 2001). According to Piaget's theory of cognitive development, early adolescents are transitioning from the concrete operational stage to the formal operations stage. Concrete operations are characterized by logical thinking and reasoning, classification skills, the ability to reverse operations, and the lack of abstract thought. Formal operations are characterized by the presence of abstract thought. Although these stages have distinct differences, early adolescents may be in both stages at the same time and transition from one to the other at completely different times from their peers. Some early adolescents may be able to demonstrate abstract thought in one cognitive domain, but still be in the concrete operational stage in others.

Like the stages of Piagetian cognitive thought and contrary to the U-shaped theory of creative development, Swanwick and Tillman (1986) propose a theory of creative development that is more linear. Their research states that creative development progresses linearly from childhood to adulthood with no slump between the two stages. One possible reason for the emergence of two contrasting models of creative development lies in the methodology utilized to arrive at each theory (Hickey, 1992). Swanwick and Tillman (1986) measured technical mastery of an artistic medium to construct their creative development model, but they did not study

children older than 11. In contrast, developers of the U-shaped theory measured the sophistication of the creative ideas produced by children to construct their model (Hickey, 2003). Hickey (1992) indicates that more research is needed in the creative development of adolescents to examine if a slump in creativity actually occurs as the U-shaped theory suggests.

Research Questions

The intent of this study was to extend the work of Kratus (1989) by examining whether early adolescents in middle school differ from children in elementary school in the way they create a melody. The need for more research on early adolescent creative development and the need for more information and data on their compositional processes led to the final design and purpose of this study. The following question, similar to that of Kratus (1989), will be examined:

1. Is gender or grade level related to time spent on the compositional processes of exploration, repetition, development, and silence?

Defining and Framing Composition

Because this study examined compositional products and processes, it was necessary to establish a working definition of each of these terms so that any data and discussion could be correctly interpreted. Many definitions of composition exist. Composition is often used interchangeably with creativity which implies that all compositions are creative and that all creative activities involve composition (Barrett, 2003). Other definitions of composition emphasize that the final product must be useful and novel to the creator (2003). According to Kratus (1989), composition is both a creative process and a creative product. Additional definitions of processes and

products will be reviewed in Chapter 2, but since this study is an extension of Kratus's 1989 study, his definitions of process and product will be used in order to compare and contrast the data between the two studies. Kratus refers to the compositional process as "the act leading to the production of a replicable sequence of pitches and durations" (p. 8). He refers to a compositional product as "a unique sequence of pitches and durations that its composer can replicate" (p. 8). In this study, I utilize Kratus's definitions for both compositional process and product.

Overview of Study

The previous section introduced the present study and put its purpose in context with previous research, the Kratus (1989) study, theories on creative development, and a current methodology. Chapter 2 extends the context of this study further by relating it to past research. Chapter 3 provides a more detailed description of the methodology used and an account of how the data were analyzed. Chapter 4 reveals the statistical results derived from analysis. Chapter 5 discusses the results in the context of past research as well as implications for music education and questions for future research.

Chapter 2: Review of Related Literature

Overview

In the previous section I introduced the study and presented the purpose and research question that was investigated. In this section, I review literature related to composition in the classroom. Specifically, I organize the review of literature into four categories: (1) rationales for incorporating composition into the classroom; (2) a survey of composition teaching strategies currently used in the classroom; (3) research on compositional products; and (4) research on compositional processes.

Exploring rationales for including composition in the classroom provides a basis for the importance of this study to both researchers and educators. Examining current composition teaching strategies used in the music classroom reveals that a variety of teaching strategies are currently being implemented, but contrasting philosophies and motivations exist leaving composition without a uniform pedagogy (Berkely, 2004; Burnard, 2000; Kratus, 1985; Strand; 2006). Finally, since composition is both a process and a product, it is necessary to examine literature that studies both of those facets. Following the review of literature, Chapter 3 will explain the methodology in detail, Chapter 4 will report the analysis and results, and Chapter 5 will present the discussion and conclusion.

Review of Related Literature

Rationale for Including Composition in the Music Classroom

Many reasons exist for incorporating composition into the music classroom and those reasons also benefit students in a variety of ways. This section will review literature relating to philosophical, historical, and sociological reasons for

incorporating composition into the music classroom as well as literature that reports on the benefits this activity brings to the student.

Philosophical Implications

The decision to include any activity in a classroom is often a direct result of a teacher's philosophy. Reimer (2003) and Elliot (1995) are two prominent philosophers who advocate for the use of composition in the classroom; however, they do this for different reasons. Reimer posits that composition is one way for students to connect with music and develop a deeper connection with one's self. Reimer states, "A consequence of being engaged in creating music is an enhanced sense of one's self from what one has experienced in creating, an expansion of one's inner life caused by one's own creative acts" (p. 103). Elliott values composition because of the high level of student involvement and its dependence on individual musicianship. When discussing creativity's implications for music education, Elliott states, "enabling and promoting musical creativity depends on enabling and promoting musicianship" (p. 234).

Although Reimer's and Elliott's central reasons for incorporating composition into the classroom differ, they do share many general principals regarding creativity. First, Reimer states that everyone is creative to some degree. He cites the philosopher Csikszentmihalyi when discussing creativity with a capital C (creativity that benefits the general public) and creativity with a lower-case c (personal creativity):

Creativity with a small "c," the personal creativity, is what makes life enjoyable, but it does not necessarily result in renown or success...It's true that we can't all be Einsteins; we can't all be Beethovens. If we think creativity includes success and recognition, then it's true, we can't all do it. But each one of us can experience the feeling of discovery that these people

had...and at that level, *that kind of creativity* is what makes life very full and worth living (Toms, 1996, tape 2578).

According to Reimer, creative activities are valuable because everyone can participate in them and they make life more enjoyable.

Elliot also agrees that all humans are capable of being creative and that different levels of creativity exist, but he also extends this belief to include the notion that if given the correct guidance and experience, all humans are capable of reaching high levels of creativity. Elliott explains that this is possible because creativity results not only from genes but also from memes (traits learned through environment). Although some students may be born with a predisposition to be creative, genetics is not the deciding factor in how creative a student will be. According to Elliott, everyone has the “conscious powers” to create music “competently” and “proficiently” (p. 235). Since everyone is capable of being creative, Elliot states, “hence, all children deserve the opportunity to develop musicianship for their own self-growth, self-knowledge, and enjoyment...” (p. 235). This mirrors Reimer’s emphasis on self-knowledge; however, Reimer also extends his view to include creativity as a means of spiritual expression. He writes, “Musical creation, as a unique form of meaning creation, engaging individuals at the highest level of functioning of which the human organism is capable. No wonder there is a spiritual dimension to it...” (p. 119). Regardless of the specific impact left on the student, Reimer and Elliot both agree that creative activities like composition are a necessary part of music education.

Historical Implications

Even though creative activities such as composition are strongly advocated by two of the prominent philosophers in music education, the emphasis on incorporating composition into the classroom is relatively new to music education (Webster, 2002). Publications on incorporating composition into the classroom date back to 1929, but articles on composition from this time period are relatively few in number (Hickey, 2001). In the 1960's, the volume of research and writing on composition and music education began to increase (Webster 2002). It was during this time period that conventions and symposia such as the Manhattan Music Project, Yale Symposium, Tanglewood Symposium, and Ann Arbor Symposium all reexamined how music was taught in an effort to develop relevant and meaningful teaching strategies as well as adapt to changing times (Keene, 1982). A decade later, MENC included creative activities as objectives for all educators in its 1974 and 1986 editions of *The School Music Program: Description and Standards* (Hickey, 2001). In the 1990's creativity was highlighted as the topic of several publications for music educators such as the *Music Educators Journal* (Hickey, 2001). In 1994, as part of an effort to have the arts included in a federal government education mandate, the voluntary National Standards for Music Education were implemented as part of the Goals 2000 Educate America Act (Hickey, 2001). These standards included composition as an activity important to all music classes so that students would receive a variety of experiences throughout their studies in the arts. Since the adoption of the National Standards, creative activities such as composition have been strongly encouraged in music education. (Morin, 2002; Reid, 2002; Wiggins, 1990).

Sociological Implications

Examining the sociological implications involved with composing involves two perspectives: the sociological influence of composition on the composer and the sociological influence of the composer on composition. Research in this area indicates that composition is an activity natural to all people and that it allows the composer to develop and express an individual compositional identity.

Influence of composition on the composer.

A recently emerging facet of including composition in the classroom is the influence of composition on the composer as a person (Carter, 2008). The sociological reasons for including composition in the classroom stem from a viewpoint that composition is an innate human ability that everyone is capable of doing to some degree (Paynter, 2001; Wiggins, 1989). Levitin (2006) supports this notion when he states that music has only recently become a consumer-based activity where only certain people create or perform and the rest simply sit and listen. He discusses a social separation that exists between those that are considered highly talented performers and those that attend the concerts and purchase recordings of those performers. According to Levitin, this has not always been the case. Historically, music has been a community-based activity in which everyone played a part. People engaged in music for the social benefits it provided them, such as self-expression and communication, not to admire the abilities of a single person or group.

While Levitin (2006) proposes that a divide exists between performers and listeners, Hargreaves (2003) suggests that this wall is starting to disappear with the advancement of new technology. People are now able to hear any type of music

whenever they want and also create music more easily thanks to advanced software (2003). It is now easier for the consumer also to become the musician.

Like Levitin (2006), Hargreaves (2003) discusses the social functions of music and suggests that they can be separated into three areas: self-identity, interpersonal communication, and mood. With easy access to music and the ability to manipulate music, the general public now has more control over these areas (2003). For example, when a person is feeling sad, he or she can easily listen to music that helps deal with that sadness. The same is true for composing music. With the advent of new software, the consumer can easily become the recording engineer who has the power to create a song that expresses whatever that consumer is feeling (2003).

Along with giving the composer the freedom to express an emotion or experience a specific mood, composition has been shown to improve the self-concept of composers (Davis & Schroeder, 2005). This notion is demonstrated in a study performed on hospitalized children who were enrolled in art and music programs which emphasized creativity and composition. Participants took a pre-test inventory of their self-concept and then participated in the art and music programs. After the programs, a post-test inventory revealed significant gains in self-concept (2005).

Besides increasing a composer's self-concept, additional studies show that composition helps composers make connections with the outside world (Morin, 2002; Reid, 2002; Wiggins, 1990). Wiggins (1990) suggests that the compositional process is very similar to the writing process which is used to help form thoughts, revise them, and finally synthesize them into a final product. Composition also makes connections with the area of social studies through similar processes of gathering data

and information and combining it into a final product (Morin, 2002; Reid, 2002; Wiggins, 1990). Finally, when used as a group activity, composition has been shown to develop social skills in children (Hargreaves, 2003; Kaschub, 1999; Wiggins, 2003). Working in a group forces students to collaborate and exchange ideas, and this exchange of ideas often leads to newer ideas and exposes students to different ways of thinking (Hargreaves, 2003; Kaschub, 1999; Wiggins, 2003). These different ways of thinking sometimes cause conflict and disagreement, therefore, problem solving skills must be used to solve these differences (Hargreaves, 2003; Kaschub, 1999; Wiggins, 2003).

Sociological influences of the composer on composition.

Research shows that the sociological implications of composition are not limited to the social benefits the composer receives during the act of composing. Recent research reveals that composers of many age and ability levels are able to establish a unique compositional identity which influences their own compositions, their perception of other compositions, and the compositional process (Bamberger, 1974; Daignault, 1996; Finnegan, 1989; Kaschub, 1999; Stauffer, 2003; Tsisserev, 1998). It is important to note that since this topic has only been studied in depth in recent years, the body of literature is not as large as other areas pertaining to music education, and little is actually known about the compositional identity of children and adolescents (Carter, 2008). The studies reviewed next present findings on a few specific aspects of the compositional process.

Examining the compositional identity of composers is a relatively recent trend in studies on composition (Carter, 2008). Stauffer (2003) examined the compositional

identity of children and adolescents by analyzing data from a previous longitudinal study. In the study, children ages 5 to 11 composed an original song using computer software without a piano keyboard. The compositions of four students were investigated and compared with comments the composers made in various interview sessions. Stauffer concluded that the students' work was directly related to their real life experiences and that each student does have an individual compositional voice.

Tsisserev (1998) also examined the compositional voice of young composers, specifically high school students. Students were given a musical composition task as well as a language-arts writing task. The compositions of the students were compared to their written work as well as notes from interviews that took place throughout the study. Tsisserev concluded that the students involved responded positively to composing and that each one was able to demonstrate a unique compositional voice even without formal compositional training. He also concluded that the participants were able to express their emotions through both types of composition.

Finnegan (1989) suggests that making students aware of their compositional influences will help them recognize their specific compositional style. Finnegan observed young students composing and improvising and followed up with interviews about specific influences that may have impacted the students' compositions. Finnegan determined that the most prominent influences on a young composer's product are gender, age, stage of life, social network, and family background.

A study by Bambergerer (1974) examined the influences of family background and social network on a composition. In this study, students used typewriter blocks to arrange a "mixed up" melody and put it back in order. The

melody had been mixed up by taking the phrases and rearranging them. Hitting certain keys on the typewriter would trigger different phrases of the given melody to be played. After several students had completed the task, Bambergerer found that not all students organized the phrases into their original order. Variations in the organization of the phrases were found to correlate with each student's culture and social context. For example, one student called Jorge could not believe that the original melody represented the correct order of the phrases. Due to his Peruvian heritage, Jorge had arranged the phrases to fit the musical model he had learned from being raised in that particular culture. Even after more explanation from the researcher, Jorge remained convinced that his version was the correct version.

Along with examining cultural and family influences on composition, studies by Daignault (1996) and Kaschub (1999) examined perceptions individual students have on the composition process as well as the resulting products. Daignault conducted a study that examined computer strategies in relation to creative qualities of musical composition. In this study, students were given a brief compositional task to complete on the computer. At the end of the assignment, Daignault found an assortment of both high and low quality compositions. High quality compositions tended to be created by product-oriented students and low quality compositions tended to be created by process-oriented students. Product-oriented students were more focused on the final outcomes, while process-oriented students were more focused on the act of creating. Daignault also found that the compositions of product-oriented students contained more repetition than those of the process-oriented students. Instead of focusing on repetition, the process-oriented students tended to

manipulate single notes rather than motives. In the conclusion of this study, Daignault writes that problem finding (in this case improvisation), is more closely related to the creative quality of the composition whereas problem solving (development of previous ideas) is more closely related to the craftsmanship of the composition. The compositions of process-oriented students tended to be more creative, while the compositions of product-oriented students tended to be better crafted.

Kaschub (1999) examined how young composers viewed the compositional process as well as their own products. Students in the study participated in several prompted, unprompted, individual, and collaborative compositional tasks such as composing a short piece on a brief poetic text. After examining the compositions, Kaschub concluded that higher quality compositions were unprompted and collaborative. Possible reasons for this are that students can be more productive when working with friends and that unprompted tasks are a direct result of the student's individual creative drive and not the instructor's template or limitations. As far as the students' perception of products and process, the students who worked best individually commented more on their compositional product while the students who worked best in a collaborative setting commented more on the process of creating the product.

The research discussed above reveals that composing is influenced by the student's social environment. Although the research is limited and specific conclusions are not able to be drawn from the existing body of research, resulting trends indicate that composition is an activity in which all people can participate to some degree and that it allows composers to develop and express a unique

compositional identity. In the next section, the specific benefits that composition presents to the student and the music classroom are discussed.

Benefits of Including Composition

Current research suggests that composition offers a variety of benefits to each student and music classroom. These benefits include musical independence, motivation, confidence, increased musical comprehension, and an in-depth method of assessment for teachers (Berkeley, 2001; Bradley, 1974; Goodkin, 2002; Hickey, 2001; Lowe, 2002; Plummeridge, 1991; Reid, 2002; Webster, 2000; Whitener, 1982; Wiggins, 1989). Even though research indicates that composition offers a variety of benefits to the music classroom, it is still not widely used by many practicing educators (Berkley, 2004; Kennedy, 2002; Reid, 2002; Strand, 2006; Webster, 2000). In the next section the benefits of composition as well as reasons why it is often excluded from the classroom are examined.

Musical independence.

Current research shows that using composition activities in the classroom fosters independent musicianship (Plummeridge, 1991; Webster, 2002). Plummeridge (1991) suggests that musical independence can be developed through composition activities; however, he limits composition to one of many aspects of music education that leads to musical independence. According to Plummeridge, developing musical intelligence leads to musical independence. Musical intelligence is nurtured through creative activities, listening, and performance. Although creative activities actively nurture musical independence, Plummeridge suggests that listening and performing play an equal role in this task as well.

Webster (2002) agrees with Plummeridge that musical independence can be developed through composition activities; however he places more value on composition as a developer of independence than other musical areas. Webster describes musical independence as the student's "ability to make aesthetic decisions about music as listeners, composers, and performer/improvisers" (p. 19). Webster suggests that this type of independence is achievable only through encouraging the students to create in many different ways.

Motivation and confidence.

Besides musical independence, composition in the music classroom has been shown to increase student motivation and confidence (Berkley, 2001; Hickey, 2001; Lowe, 2002; Pogonowski, 1985). In the book *Why and How to Teach Music Composition*, Hickey (2001) suggests that composition activities that are open-ended with low external rewards produced high levels of intrinsic motivation in students. Lowe (2002) also observed increased intrinsic motivation in students who participated in composition activities and concluded that the result was due to the fact that the specific activities used were fun and engaging for the students. Pogonowski (1985) supports this observation and suggests that due to the high level of student involvement and the satisfaction students receive when a product is completed, composition activities generate motivation and interest in music class (1985).

Composition activities have also been shown to increase student confidence. Berkley (2001) studied a school music program in the United Kingdom where each student had to submit an original composition in order to graduate. Berkley observed

that students who were able to successfully create an original piece of music were more confident in their performing abilities as a musician.

Musical comprehension.

Along with increasing motivation and confidence, composition activities have been shown to increase musical comprehension (Berkley, 2001; Bradley 1974; Goodkin, 2002; Whitener, 1982). Bradley (1974) performed a study investigating the effects of different types of musical instruction on students. In his study a fourth grade class was taught through a variety of composition music activities while four other classes received no creative instruction. Results of the study suggest that students who participated in the composition activities demonstrated enhanced aural and visual perceptions of music.

Berkley's (2001) research also shows that composition increases musical comprehension in students. Berkley suggests that this is because students learn and experience musical concepts from the inside-out while they are composing. Rather than being taught about a concept and then applying it through a performance of someone else's work, composition activities allow a student to apply and experience a concept within their own work before they learn the theory behind it.

Gains in comprehension of specific musical concepts were also observed by Whitener (1982). Whitener's study compared the effects of a comprehensive musicianship program and a traditional performance-based program on junior high students. The comprehensive musicianship program included compositional activities as part of the approach. After participating in the program, students instructed using comprehensive musicianship showed significant gains on identifying intervals, meter,

major and minor modes, and improved in auditory-visual discrimination. It is important to note that both types of instruction produced equal levels of performance ability.

The previous section discussed benefits of composition that are specific to the student. Studying composition increases a student's musical independence, motivation, confidence, and comprehension. The next section explores benefits that including composition brings to the teacher and classroom as well as reasons why composition is often excluded from the classroom.

Student assessment.

Aside from the benefits composition brings to the student, composition activities can also benefit the teacher. Hickey (2001) suggests that composition can be used as a form of assessment. When a student creates a composition, the teacher is able to see a tangible product which either demonstrates or does not demonstrate an understanding of the content being taught in the classroom. In this sense, composition can be used as a formative assessment on the part of the teacher to help make informed curricular decisions based on the products that the students are creating.

Why composition is excluded

Although research suggests that composition presents a variety of benefits to both the teacher and the student, composition is still not widely utilized in American schools (Kennedy, 2002 & Strand, 2006). Kennedy (2002) reports that composition is only being taught in 2-7% of American secondary schools. Strand (2006) surveyed music teachers (choral, instrumental and general) in Indiana and found that only 5.9% of music teachers use composition in their classrooms and of that percentage, very

few use it frequently. Morin reports that 8th graders in the United States have achieved only limited compositional abilities in music before moving on to high school (2002).

A valid question that arises after examining the statistics presented above is: why is the implementation of composition so low despite the benefits it has been shown to provide? Various researchers have asked the same question and reported a variety of answers. One reason that composition is rarely included in the classroom is because many teachers are unfamiliar with composition and do not feel comfortable with the subject (Kennedy, 2002; Morin, 2002). Others admit that they feel such a large amount of stress from preparing for performances that they do not feel like they have time to fit in something else (Kennedy, 2002; Reid, 2002; Strand, 2006; Webster, 2000). Class sizes and complex schedules also play into the difficulty with incorporating composition because many teachers find it difficult to allow students to work on their own with too many kids, the noise factor, and a very short amount of time to teach (Strand, 2006). A lack of resources also contributes to this as many teachers may have the desire to use composition activities, but do not have the instruments, space, software, or instructional guides to do so (Kennedy, 2002; Morin, 2002). Morin (2002) found that even if offered the training, funding, and resources to include composition, some teachers would still not incorporate it simply because they feel that creativity is more of a personal enterprise and that it should be developed individually and outside of the music classroom.

Teachers face many challenges when trying to help each student succeed in the music classroom as well as keep up to date with current teaching trends and

strategies. A variety of reasons and benefits exist for teachers to incorporate composition into the music classroom; however, a variety of obstacles stand in their way. According to Berkley (2004), one main reason teachers do not incorporate composition into the classroom is that there is a lack of publications about composition pedagogy and teaching strategies. The next section examines the philosophies and motivations behind many composition teaching strategies that have been published and implemented in music classrooms up to this date.

Survey of Teaching Strategies Currently Implemented

In the previous section, a lack of resources was cited as a significant reason for why teachers do not implement composition into the music classroom. Popular resources for teachers include teaching periodicals and education research journals. Due to the emphasis on including composition in the music classroom from organizations such as the MENC these types of publications have increasingly included composition as a topic (Hickey, 2001). Examining the publications written about composition reveals a variety of teaching strategies as well as differing reasons for using them. Compositional teaching strategies can be subdivided into group composition and individual composition tasks (Ginocchio, 2003; Hickey, 1997; Morin, 2002; Smith, 1960; Thoms, 1987; Wiggins, 1989 and 2003). Within those tasks, a variety of approaches exists which include the use of templates and extra-musical associations to provide structure as well as free composition which involves little to no structure (Bauman, 1972; Berkley, 2004; Brophy, 1996; Ginocchio, 2003; Hickey, 1997; Kaschub, 1997; Kennel, 1989; Regelski, 1986; Tait, 1971; Thoms,

1987; Wiggins, 1990). These tasks and approaches are examined in more detail in the following section.

Group Composition

Creating a composition in a small group or as an entire class is a strategy used by many professionals (Ginicchio, 2003; Hickey, 1997; Smith, 1960; Thoms, 1987; Wiggins, 1989 and 2003). Small group compositions can range from creating short melodies as a group to creating a small ensemble piece to be performed at a concert (Ginicchio, 2003; Hickey, 1997; Smith, 1960; Thoms, 1987; Wiggins, 1989 and 2003). One of the reasons for using group composition tasks is the fact that many times, students learn from each other during the process (Wiggins, 2003). According to Wiggins (2003), the act of working towards a common understanding of the final product in a group forces students to compromise and take on new perspectives. Sometimes, disagreements will produce new ideas and take the composition in a different direction.

Creating a composition as a class can be done by having each student create a short melody and then having the class decide how to arrange those melodies together into phrases and various sections of the song (Hickey, 1997). If the class is advanced enough, after the themes are selected and arranged, students can add harmony parts or the teacher can arrange the song into a format that is playable for the group (Hickey, 1997).

Individual Composition

When teaching composition as an individual task, a few strategies exist. Morin (2002) writes that teaching composition involves three different phases:

expanding the compositional base, selecting aesthetic content, and finally composing music. Expanding the compositional base is when the teacher immerses the student in skills, contexts, styles and rhythms, so that the student has a wide knowledge base to call upon when faced with a compositional task. Selecting aesthetic content is when the student decides what is going to be expressed through the composition. For best results, Morin suggests that the content must be meaningful to students. In the final phase of composing music, the students begin by exploring sounds on their instrument and then are encouraged to improvise ideas that fit the compositional task. The key concept behind Morin's strategy is that students must have a large compositional base if they are to create meaningful and well-written compositions.

In order to help students make individual decisions during the composition process, Hickey (1997) advocates for the use of the SCAMPER process when teaching students how to compose. SCAMPER is an acronym for substitute, combine, adapt or add, magnify, put to other uses, eliminate, reverse or rearrange (1997). The acronym is useful to students because it reminds them of things they can be doing in their composition if they arrive at a point where they cannot generate any ideas. Before diving into a compositional task, students are shown how each letter of the acronym works. This allows to student to experience various compositional devices before engaging in an individual task.

Templates

Many professionals and researchers advocate for the use of highly structured tasks when implementing composition into either group or individual activities (Berkley, 2004; Brophy, 1996; Hickey, 1997; Mills, 1963; Rummler, 1973). One way

of providing structure is through the use of templates. Hickey (1997) recommends the use of templates because they give the students focus and make the task less overwhelming. Brophy (1966) writes that students should be given as many parameters as necessary in order for them to successfully create their own pieces. The primary reason behind the use of templates lies in the notion that when students have a framework to compose within, they are more able to succeed in the compositional task (Brophy, 1996; Hickey, 1997).

An assortment of templates has been published in journals, magazines and books as resources for teachers. One example involves taking a tune, dividing it into phrases, writing the phrases out of order, and then having the students try to put the phrases back in the correct order (Hickey, 1997; Kennel, 1990; Thoms, 1987). The opposite of this approach can be taken by asking students to take a familiar tune and rearrange the phrases to create a new tune (Hickey, 1997; Thoms, 1987; Kennel, 1990). In this strategy, the musical material is easily accessible to students and the task is well within the grasp of most students' ability levels.

Extra-musical Associations

Another popular practice used when implementing composition is the use of extra-musical associations. Extra-musical associations provide students with ideas for their composition as well as a basis for comparing composition with other familiar tasks (Berkley, 2004; Ginocchio, 2003; Kaschub, 1997; Regelski, 1986; Tait, 1971; Wiggins, 1990). Ginocchio (2003) uses extra-musical associations by having the students create melodies based on impressions of literature, art, photography, or world events. As students become more advanced in their understanding of musical

elements and composition, the compositional tasks also become more advanced and the students move from creating variations to adding expression, harmony, and even orchestrations (2003). Kaschub (1997) also recommends using sources outside of music like poetry. Students use poetic subjects and the rhythm of the words to create either a melody that matches the words or an accompaniment that fits the reading of the poem. Kaschub emphasizes that the subject of the composition must be interesting to students in order to generate maximum interest in the task.

Another composition task involving extra-musical associations is a soundscape (Regelski, 1986; Tait, 1971). A soundscape requires no knowledge of written notation or melodic structure. Students are simply given a scene to recreate through sound such as a city street, jungle, or even a farm (Regelski, 1986; Tait, 1971). With this activity, students are encouraged to create their own notation so the soundscape can be duplicated multiple times.

Using extra-musical themes and soundscapes often involves creating a replicable composition with original notation and also relates composition and music to areas outside of the music classroom. Other professionals also bring in areas outside of the music classroom to help students understand the compositional process. Wiggins (1990) relates the process of composition to the writing process that students learn in their language arts classes. Since students are already familiar with the concepts of brainstorming, organizing, editing, and publishing, these concepts easily transfer to the music classroom and help students understand that the two processes are quite similar. Berkley (2004) relates the composition process to problem solving. Students using this comparison are taught to first recognize the problem, generate

initial ideas, create a draft through development and revision, and then determine the final version through review and rehearsal. Goldberg (1990) suggests that during this process students should be asked frequently how they are creating their composition. Asking students about their thought process not only helps the student think through their problem and vocalize their strategy, it also helps the teacher determine if the student fully understands the task.

Free Composition

While many researchers and professionals such as those mentioned previously advocate for templates, limitations, and very specific guidelines to be used when composing with students, other researchers disagree. Bauman (1972) and Wiggins (2003) both recommend giving students as much freedom as possible. Wiggins suggests that forcing too many constraints on the student is like telling students to write a story using only certain words (2003). Bauman and Wiggins are concerned that compositional products resulting from too many constraints will be more contrived rather than a true expression of the student composer. In order for students to be able to truly express themselves and develop their unique voice, students must be allowed to compose whatever they want in whatever way they choose to do it.

The compositional teaching strategies discussed above show that many ideas exist about how to teach composition to groups and individuals and that all professionals do not agree on how much structure is required for students to be successful at composing or what exactly constitutes a compositional product. Research studies specifically related to the compositional products of students will be examined next.

Studies on Compositional Products

Teaching strategies that are currently being used to get students involved in composition as well as the products that result from those strategies were discussed in the previous section. The focus of this section is research that explores the compositional products of children, specifically, how those products differ due to instrument choice, time, aptitude, age, and process.

Instrument Choice

In a compositional task, instrument choice can refer to both the instrument choice of the classroom teacher *for* the student, and the choice of instrument *by* the student. Kratus (2001) investigated the effects of different melodic configurations of an Orff instrument on the way children composed and the characteristics of their compositions. Forty-eight fourth graders with no previous composition experience were asked to compose a song on an Orff instrument; however, the bars on the Orff instrument were arranged differently for each quarter of the sample. Some students worked with a five-bar pentatonic scale, some with a ten-bar pentatonic scale, some with a five-bar melodic minor scale, and other with a ten bar melodic minor scale. Kratus found that when students were given the harmonic minor scale, they had a better chance of ending on the starting pitch and establishing a tonal center. Kratus suggests that this is true because the harmonic minor scale includes a half step that establishes a tonal center which is contrary to the pentatonic scale which has no tonal center. Aside from students ending on the starting pitch more frequently with the harmonic minor scale, the available pitches on the Orff instrument had no significant effects on the students' compositions.

Kauschub (1999), whose study was also mentioned above, found an significant piece of information regarding students choosing their own instrument. Students who worked better as individuals chose an instrument they knew they could play well in order to complete the task. Students who worked best in a collaborative setting chose an instrument that they really enjoyed playing, regardless of their ability on it. A reason for this result is that since individuals were more product-oriented, they knew that they had to have fluency on an instrument in order to complete the product in the allotted time. In the case of the collaborative students, they chose an instrument that would help them further enjoy the process of composing (1999).

Time

The time spent working on a product and the time allotted for a compositional product to be completed has been found to impact the product by various research studies (Daignault, 1996; Kennedy, 1999; Delorenzo, 1989; Levi, 1991). Daignault (1996) and Delorenzo (1989) observed that higher quality compositions tended to emerge later rather than earlier. Kennedy (1999) also observed this trend by reporting that young composers spent less time on their compositions and therefore created lower quality products. In this case, time also refers to experience on the selected instrument as well as the specific amount of time given to complete the project.

When discussing actual time limits imposed by teachers, Levi (1991) writes that better compositional products result when no time limits are given. This eliminates a stress on the student and allows the creative process to flow naturally and at its own pace. The concept of no time limit also fits in with the suggestion of

Wiggins (2003) and Bauman (1972) to give as much freedom to the student as possible.

The amount of time spent composing and the amount of time allotted by the teacher for the task has been found to impact the compositional product in some way. Although Kennedy (1999) reports that the amount of time spent composing is positively correlated with the quality of the composition, that amount of time was also related to the age of the composer. The influence of aptitude and age on the compositional product will be examined in the next section.

Aptitude and Age

Besides instrument choice and time, aptitude and age also impact the outcome of the final compositional product (Flohr, 1979; Henry, 1995; Kratus, 1985; Carlin, 1997). Flohr's (1979) study aimed to characterize and describe the behavior of four, six, and eight-year-olds while they were engaged in improvisational tasks. Each child met one-on-one with the researcher and had to complete three tasks: free exploration on the xylophone, call and response patterns on the xylophone, and improvisation with a given accompaniment. Flohr found that older subjects used repeated rhythmic or melodic patterns initially and that older subjects also played more tonally. It is interesting to compare this to the findings of Daignault (1996) who wrote that higher quality compositions used more repetition and were better crafted than lower quality compositions.

Henry (1995) studied how the processes and products of 64 fourth-grade students were impacted by musical aptitude and differing instructional methods. The students were broken into four groups of 16 and each group received a different type

of instruction. One group received repeated composing time (free time to write music) and pattern instruction (lessons on musical form and phrase structure), another received only composing time, another received only pattern instruction, and a control group received no special instruction. At the end of a twelve-week period, all of the students were recorded as they composed a song. Judges listened to the recordings to examine how the students composed the songs as well as the cohesiveness, inclusion of patterns, and the students' ability to repeat each composition. The findings indicate that students who had experience in pattern instruction used more repetition than others. Also, the pattern instruction students composed more tonal compositions than the rest of the students. Henry is hesitant to declare this a definite trend in compositional products and calls for this study to be duplicated on a variety of age groups; however, Henry does point out the fact that students who had been trained in identifying and constructing musical patterns did create better crafted products, which leads to the conclusion that aptitude, when combined with teaching methods, affects the compositional product.

Another study which analyzed the compositions of children was performed by Kratus (1985). Kratus provided 80 children ages 5 to 13 ten minutes to compose and rehearse a short song on an electronic keyboard. Each composition was analyzed for its use of rhythm, melody, motive, and phrase structure. An analysis of the data provided some significant results. First, Kratus did find developmental differences between the ages of 5 and 11 in children's ability to compose and in their use of rhythm, melody, and motive. These differences show a linear progression as students gradually improve on each of these items with age. The significant result appeared in

the comparison of eleven to thirteen-year-olds. Thirteen-year-olds actually scored lower than eleven-year-olds in their ratings of tempo stability, metric strength, tonal strength, and finality of the composition. Kratus suggests that this could indicate a plateau in understanding during this age level rather than a regression. This plateau could result from many different facets. First, the general music classes of eleven-year-olds could be different than the music classes of thirteen-year-olds. Kratus suggests that verbal and theoretical knowledge are emphasized more in the general music classrooms of older students and that the environment is less active and creative in nature. Also, thirteen-year-olds may be less conforming to traditional music standards and could actually be including new and innovative ideas in their compositions which are less polished than the traditional music ideas they have been exposed to since childhood.

While the differences between eleven- and thirteen-year-olds show a plateau in understanding, the progression from ages 5 to 11 indicates a steady growth in musical sophistication (Kratus, 1985). Songs created and performed by five-year-olds sounded much like improvisation and were difficult to replicate as were the songs of seven-year-olds. By the age of 9, students' compositions were more varied than any other age, and by age 11 students were incorporating a high degree of rhythmic and melodic organization. Even with the age-related differences in composition products, Kratus points out that almost all children can create an individual composition without theoretical knowledge or prior experience. Kratus also writes that the developmental differences observed can aid curriculum developers and teachers in setting guidelines, and objectives that are appropriate for each age level.

Like Kratus (1985), Henry (1995), Flohr (1979), and Carlin (1997) also observed developmental differences in the compositional products of children. In Carlin's research, students created a composition on the instrument of their choice with unlimited time on an electronic keyboard. Students were allowed to use up to ten different electronic sounds from the keyboard in their compositions. After creating the product, students participated in a final interview in which they discussed their products as well as the act of creating them. Carlin found that older students were more aware of musical traditions and tried to conform to them. This was evident when other sounds on the keyboard like bombs and breaking glass were not used in musical compositions. Also, students with previous training wanted their compositions to reflect their level of expertise. Carlin makes a point of reporting that all compositions were tonal, had sections, and used repetition. This correlates well with the research of Daignault (1996), Kennedy (1999), and Delorenzo (1989), that higher quality compositions result when more time is spent creating them. It is also congruent with research of Wiggins (2003) and Bauman (1972) that more freedom results in better compositions. In this study, instrument choice, time, experience, and age all played a role in the outcome of the compositional product.

The above research discussed the way that compositional products can be influenced by a variety of factors which include instrument choice, time, aptitude, and age. One additional factor in addition to product is the other half of composition: process. Since composition is both a product and a process, studies that analyze various compositional processes are examined in the next section.

Studies on Compositional Processes

Many studies have analyzed the process of composition in an effort to examine how and why compositional products are created (Bennett, 1976; Kratus, 1994; Levi, 1991; Webster, 2002). Some studies focus on both the compositional process and product which served as a challenge when trying to separate them for this review. Through their respective studies, researchers have utilized various ways to describe the process children and adults use when creating music.

Kratus (1994) observed the phases of exploration, development, repetition, and silence. Bennett (1976) describes the productive mood, musical conception, sketch and composition. Levi (1991) examines the stages of exploration, focus, rehearsal, composing, and editing. Webster (2002) breaks the process down even further into the stages of enabling skills, divergent and convergent thinking, enabling conditions, preparation, convergent thinking, and the final product. Kennedy (1999) also examined the phases of the compositional process and found that children and adults experience similar phases while composing. In this section research about the different phases of the compositional process in children is discussed from the early stages of exploration to the final stages of synthesis and rehearsal.

Exploration

Regardless of the name given to the first stage of composition, research shows that composition usually begins with some form of exploration (Freed, 1999; Kennedy, 1999). During this phase a variety of activities occur that can vary based on age and context. Younker (1987) reports that younger children will spend more time on this phase than older children. According to Kratus (1994), Wiggins (2003), and

Levi (1991), less time spent on exploration is correlated to a high audiation ability. This means that students who were able to hear a melody clearly in their heads were less likely to spend time searching for a melody by exploring on an instrument. Students who can hear musical ideas clearly in their heads are less likely to use an instrument to generate an idea and more likely to use an instrument to recreate the idea that is in their heads (Kratus, 1994).

Some researchers do not support the idea that students only generate compositional ideas through exploration on an instrument (Bennett, 1976; Freed, 1998; Kennedy, 2002; Wiggins 1994 & 2003). Wiggins (2003) and Freed (1999) both agree that students begin composing with a holistic idea in mind. When exploring on an instrument, students take this idea and practice manipulating it to see what aural possibilities exist (Wiggins, 2003). Instead of moving from small ideas to one large composition, Wiggins suggests that students actually hear a version of the final product in their heads and then explore the musical possibilities for that final version on a specific instrument (2003). Wiggins also writes that students who spend large amounts of time exploring without developing melodic ideas are most likely unfamiliar with the instrument and are trying to figure out how the instrument sounds and functions.

Contrary to the research discussed above, Bennett (1976) supports the thought that children first start with a single idea that grows into a larger composition. Freed (1999) suggests that some students use popular music as inspiration to get them started during this initial stage of composing. Regardless of the method used to

generate ideas during the exploration phase, Kennedy (2002) posits that students do not seem to have any difficulty generating musical ideas.

Elaboration and Refinement

After musical ideas have been generated or conceived, the next major phase in the compositional process involves some sort of elaboration or refinement of those ideas (Bennett, 1976; DeLorenzo, 1989; Kennedy, 1999; Wiggins, 2003). Kennedy (2002) observed that during this phase, procrastination is common. One reason for this corresponds to the period of incubation mentioned earlier (2002). Incubation allows students to let the idea develop in the brain while they find something else to do in the mean time. After sufficient incubation time, students begin to take their ideas and revise them (Kennedy, 1999).

While observing the compositional processes of students and adults, Kennedy (1999) found that the time spent on revision or elaboration differs between children and adults. According to Kennedy, older composers spent far more time revising ideas than younger composers. Along this line of thought, DeLorenzo (1989) found that higher level students spent more time developing motives and lower level students spent more time developing individual notes one at a time.

Wiggins (2003) observed a different trend during this phase. According to Wiggins, children are constantly editing and revising their ideas from the very beginning stages of composition. During the elaboration and revising process, the student's mind is in a state that does not work well with frequent interruptions (Kennedy, 2002; Webster, 2002; Wiggins, 2003). Students need time and space to

think clearly and allow their ideas to form without too many suggestions and breaks in thought caused by the instructor (Kennedy, 2002; Webster, 2002; Wiggins, 2003).

Synthesis and Rehearsal

When ideas have been sufficiently elaborated and developed, research shows that students move into a final phase of synthesis and rehearsal (Levi, 1991; Webster, 2002; Wiggins, 2002). During this phase, students check their ideas based on what they hear in their heads and all ideas are compared with each other in order to assure that they fit well in the composition (Levi, 1991; Wiggins, 2003). Webster (2002) emphasizes that this phase is distinguished from the others by its shift from divergent to convergent thinking. Exploration has ended and now the students need to make final choices and narrow the ideas down to a final product (2002). Levi (1991) writes that the decisions made during this time of synthesis are influenced by individual differences and context issues which help students figure out what the “right” musical sound is. When making these decisions to form the final product, this phase may prove difficult for younger composers because according to Wiggins (2002), younger students have trouble conceiving of melodies in sections. This difficulty coincides with the research mentioned above that younger children’s compositions sound more improvisatory in nature and are less replicable than the compositions of older students (Kratus, 1985). This notion is also present in Younkers’s (1987) findings in which older students worried more about harmonic fit than younger students while synthesizing ideas.

After the ideas for the composition are synthesized into a larger whole, students begin to rehearse their final products (Kratus, 1989; Levi, 1991). Students

engage in rehearsal with the goal of being able to replicate the composition (Kratus, 1989; Levi, 1991). During this time, students may rehearse parts of the composition or the entire thing. According to Levi (1991), students were more successful at replicating their ideas when they had unlimited composing time and were more familiar with the instrument (1991).

Synthesis and rehearsal represent the final stages of the composition process. Research on the composition process discussed above reveals that students experience different phases while engaged in writing music. Although students experience similar phases, the extent to which they are experienced varies due to different factors.

The literature reviewed in this chapter explored research relating to composition in the classroom, specifically rationales for including composition, teaching strategies currently used in the classroom, research on compositional products, and research on compositional processes. As mentioned above, this study built upon and added to the literature reviewed, specifically the work of Kratus (1989) and examined the compositional processes of early adolescents. In the next section the methodology utilized in this study is presented.

Chapter 3: Methodology

Restatement of Purpose

The purpose of this study was to examine the effects of gender and grade level on the amount of time early adolescents spent on selected compositional processes (exploration, repetition, development, and silence).

Participants

Students ($N=30$) in grades 6 ($n=10$), 7 ($n=10$), and 8 ($n=10$) were randomly selected from a middle school band class in a Central Maryland suburb. Participants were all enrolled in an 87-minute band class which met two to three times each week. Although the students had prior musical experience, they had little to no experience in composition. To help eliminate the possibility of students recreating songs that they had already learned, students with keyboard experience were excluded from participation. Prior keyboard experience for this study was controlled by excluding students who owned an electronic keyboard or students who had received individual piano lessons.

A list of eligible participants was generated by comparing the roster of the school's sixth, seventh, and eighth grade bands to the criteria mentioned above. Five boys and girls in each grade were randomly selected from the list of eligible students. Each eligible student was approached individually to discuss participation in this study. I made it clear to the students that participation was completely voluntary and did not affect their classroom grade in any way. The students who agreed to participate in this study were enrolled in band classes for at least two years and had no formal training in composition.

Design

This causal-comparative study analyzed the amount of time spent by early adolescents on the compositional processes of exploration, repetition, development, and silence as well as the degree to which each student was able to replicate his or her own composition. Threats to the validity of this type of study include variability within the subjects, prior history with the treatment, data collector bias, and interaction effects from pre-tests. Many steps were taken in designing this study to control for these specific threats. To control for variability with the subjects, the independent variables were limited to the immutable factors of age and gender. Prior history with the treatment (in this case, composition), was controlled by only selecting subjects who had no formal compositional training and no private instruction on a keyboard. Data collector bias was controlled by selecting two additional objective evaluators to tabulate the data along with the researcher. Interaction effects from pre-tests (in this case, the pre-composition activities which did not serve as a test but as a means to introduce the project) were controlled by not including any form of composition instruction in the pre-composition activities.

Once all participants completed the composition task, the time spent on specific compositional processes was tabulated by the researcher and two independent judges and those data were used to determine any patterns related to age or gender. The researcher and the independent judges also calculated the proficiency level of each participant's composition. Proficiency level was rated on a three-point scale and indicated the student's ability to replicate his or her composition. The scale use was as follows:

3-Replication is the same as or almost the same as the original

2-Some sections of the replication are the same as the original

1-None or almost none of the replication is the same as the original. (p.10)

The ability to replicate a composition was important to this study because this study's definition of composition is "a unique sequence of pitches and durations that its composer can replicate" (Kratus, 1989, p. 8). In this study, 76% ($n=23$) of the participants received an average rating of 3 indicating that they were able to create a composition that sounded exactly the same when it was played both times. 24% ($n=6$) of the participants received an average rating of 2 which indicated that some of their composition was the same as the original, and no participants received an average rating of 1 which would have indicated that none of the composition sounded the same when played twice. One seventh grade participant's data was removed from analysis in this study because the participant did not show any signs of effort or interest during the 10-minute composition time and had a history of this behavior in the music classroom. The participant created no cohesive composition and all three judges agreed that the participant used exploration for 98% of the composing time which was highly outside the means of the other seventh graders.

Elements of Analysis

This study examined the time spent on the specific compositional processes of exploration, development, repetition and silence. Definitions of these processes (Kratus, 1989) were as follows:

Exploration

“The music sounds unlike music played earlier. No specific references to music played earlier can be heard” (p. 9).

Development

“The music sounds similar to, yet different from, music played earlier. Clear references to music played earlier can be heard in the melody, the rhythm, or both” (p. 9).

Repetition

“The music sounds the same as music played earlier” (p. 9).

Silence

“No music is heard because of subject silence, subject statement or question, or my statement” (p. 9).

Procedures

The study took place in a music classroom in the participants’ middle school and only one student took part in the composition task at a time. The musical instrument used in this study was a Roland keyboard with 88 keys with the sound patch set to “piano.” This instrument was larger than the one used by Kratus (1989), thus a range of a Major 17th was marked off so that the keys students were to use were easily identified. The keyboard was located on a table in the music classroom. I was the only one in the room with the students who created their compositions individually. A Zoom H4 digital recorder was located on one side of the student to record any sounds or dialogue that took place during the process. On the other side, a

timer was displayed that helped students keep track of the time remaining in the process.

Before each student began the composition task, pre-composition activities took place for 2-3 minutes to help familiarize the student with the instrument. Activities consisted of a series of imitation exercises on the keyboard. This brief amount of time spent on pre-composition activities was meant to minimize the time students spent becoming familiar with the instrument while they were being timed. Due to the fact that all the students involved in this study had little to no experience on a keyboard instrument, some students may have had to spend their composition time exploring the actual instrument and figuring out how to find the desired notes. To prevent these activities from influencing the actual compositions themselves, the researcher used a carefully scripted set of activities which only focused on the sounds and physical functions of the keyboard itself (Appendix A). None of the activities involved composition instruction or information about specific processes and strategies. It is possible that a melodic pattern used in the pre-composition activities could have been used by the student in a composition; however, the patterns themselves were not long enough to constitute a composition and could not have taken the place of the composition process as the student would still have to take the idea and develop it into a larger piece.

After the pre-composition activities, the student received instructions that were read aloud from a script to make sure that each student heard the exact same set of instructions. I used the same instructions Kratus provided in his study except I used a digital recorder rather than a tape recorder:

Your project this morning is to make up a song on the piano. Your song will be a brand-new song, one that no one has ever heard before. You may use any white keys you wish, but your song should begin on the key marked with an "X" (middle C). You will have 10 minutes to make up your song, and I will ask you to play your song two times for the [digital recorder]. Be sure you can remember your song, so that you can play it the same way two times. Do you have any questions? (Kratus, 1989, p. 9)

Restrictions like limiting the starting note to middle C and only allowing the students to use a range of a 17th on only white keys were intended to help guide the students to complete the task. The 10 minute time frame was used because it was the same time limit used by Kratus, it gave the students a time table so that they could plan and create their composition accordingly, and it allowed the data to be tabulated across a uniform time frame.

After the student had the opportunity to ask questions, the student's attention was directed to the timer which displayed the amount composition time that had passed. To encourage students to consider the time limit, they were told when only two minutes remained. Students were encouraged to work the entire time and were not be asked to replicate their compositions until after the ten minute time period had expired. While students were composing, I was in my office with the door open so students could easily get my attention if they had any questions. After ten minutes, students were asked to play their compositions two times in a row.

Analysis

After all students had completed the composition task, recordings were transferred to a computer using the digital recorder's built-in USB interface and were later burned to three compact discs using Apple I-Tunes (Apple, 2008) software. Each compact disc contained the tracks in different sequences to control for order effects.

The researcher kept one disc for data analysis and the others were distributed to two independent judges who also tabulated the data. The judges were both experienced in composition and held degrees in music education. The researcher met with each judge personally to define the processes and play a sample recording which was partially coded with the researcher present. Judges had the opportunity to ask questions during the training and during analysis. Each judge and the researcher tabulated the results by listening to each composition on a personal computer and using the clock of the playback software to monitor the track position. While listening, each judge marked which compositional process was taking place during each five-second interval on a tabulation sheet which broke the entire 10-minute composition time into 120, 5-second intervals (Appendix B). The process employed during the majority of each interval was recorded on the tabulation sheet as well as the total time spent on each process.

When all compositions were analyzed the researcher tabulated the total number of 5-second intervals spent on each compositional process (exploration, development, repetition, or silence). To determine inter-rater reliability, a joint probability agreement was used. The mean alpha reliability coefficient for all compositional processes was .91. Individual process means ranged from $r=.89$ for silence to $r=.95$ for development.

The data were further analyzed to determine any gender or grade level differences in the time spent on the four compositional processes as well as each student's ability to replicate the composition using a repeated measures analysis with multiple independent variables. The dependent variables for this calculation were

exploration, development, repetition, silence, and proficiency, and the independent variables were age and gender. Further examination of any significant differences that resulted were calculated using a Tukey post hoc test.

IRB and Time Table

Upon receiving approval from Internal Review Board at the University of Maryland, College Park, I began administering the composition task to 2-3 participants each day for 12 days. Data collection was completed in three weeks.

Chapter 4: Results

Introduction

This chapter presents the results of this study using the methodology explained in Chapter 3. Data based on gender and grade level are reviewed first followed by the results of the analysis of compositional processes used over time. The chapter concludes with descriptive statistics concerning grade level and gender. Chapter 5 discusses these results and places them in the context of the Kratus (1989) study as well as other past research.

Grade Level and Gender Differences

The mean percentage of time spent on each compositional process was calculated for each participant by adding the total number of 5-second intervals for a specific process marked by all three judges together and dividing by three. The mean percentage of time used by each grade level and gender for exploration, development, repetition, and silence is shown in Table 1. Sixth grade students spent most of their time on exploration and repetition whereas seventh grade students spent most of their time on repetition and eighth grade students spent most of their time on development. Development is the only process where the mean time demonstrates a linear trend by grade level. Male and Female students shared similar results, but male students seemed to divide their time more equally between exploration, development, and repetition while female students spent slightly more time on repetition.

Table 1

Mean Number of 5-second Intervals for Grade and Gender Spent on Composition

Processes

Grade	Exploration		Development		Repetition		Silence	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
6	34.9	7.5	22.3	5.3	46.1	9.0	17.9	4.4
7	26.8	8.0	33.5	5.6	46.3	9.5	13.3	4.7
8	27.4	7.5	41.8	5.3	33.6	9.0	16.3	4.4
Male	31.6	6.4	34.6	4.5	38.9	7.6	14.8	3.7
Female	27.7	6.2	30.5	4.3	45.1	7.3	16.9	3.6

This study examined if gender and grade level were significantly related to the time spent on the compositional processes of exploration, development, repetition, and silence. The data were analyzed using the standard version of SPSS Base 11.0 software. A general linear model (GLM) repeated measures analysis with multiple dependent variables was performed to determine relationships among gender, grade level, and time spent on compositional processes (exploration, development, repetition, and silence) and proficiency. Partial eta² (η_{partial}^2) was used to determine relationship strength, while profile plots, confidence intervals, and descriptive statistics were used to examine the nature of relationships. An alpha level of .05 was used for each test. Pillai's Trace statistic was used for all multivariate tests and univariate tests used the Huynh-Feldt process to adjust for potential violations of sphericity as determined by Mauchly's test. Table 2 presents the results of the repeated measures analysis.

Table 2
*Repeated Measures Analysis for Effects of Gender and Grade Level on
 Compositional Processes*

Source	Value	df	F	<i>p</i>	eta Squared
Processes	.59	3	10.03	.00	.99
Gender and Processes	.03	3	.20	.90	.08
Grade and Processes	.30	6	1.30	.28	.46
Gender, Grade, and Processes	.19	6	.77	.60	.27

The three-way interaction between gender, grade level, and time spent on each compositional process was found to be statistically nonsignificant [$F(3, 6) = .77, p = .62, \eta_{\text{partial}}^2 = .27$]. The two-way interaction between grade level and time spent on each compositional process was also statistically nonsignificant [$F(3, 6) = 1.30, p = .28, \eta_{\text{partial}}^2 = .46$] as was the two-way interaction between gender and time spent on compositional processes [$F(3, 6) = .20, p = .90, \text{partial } n^2 = .08$]. A statistically significant main effect was found for compositional processes used [$F(3, 6) = 10.03, p = .00, \eta_{\text{partial}}^2 = .99$].

A follow-up analysis of the statistically significant main effect for compositional processes using 95% confidence intervals revealed that participants spent less time in silence ($M=15.84, SE=2.59$) than in repetition ($M=42.02, SE= 5.29$) or development ($M= 32.53, SE =3.13$). No other significant differences were found.

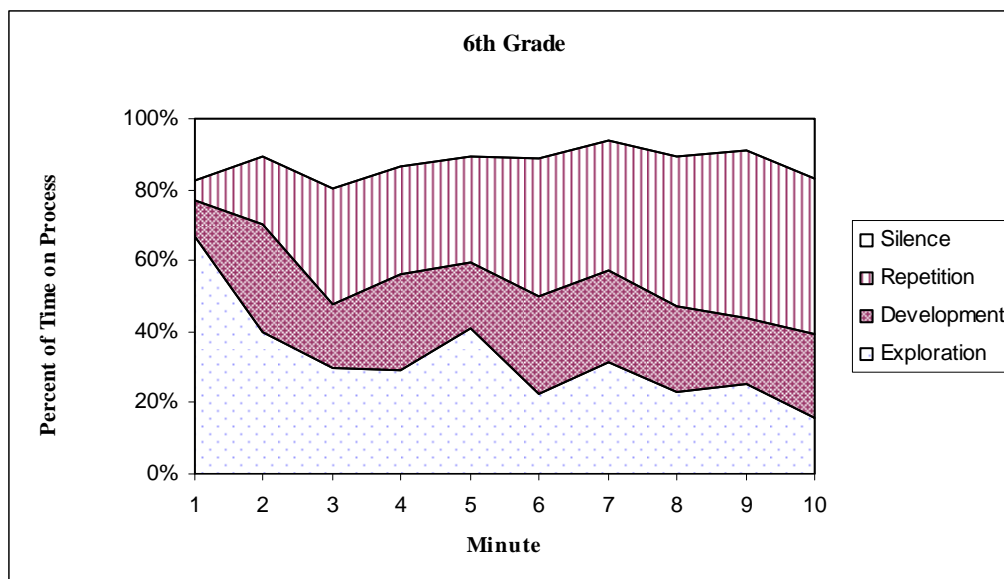
Analysis of Processes Used over Time

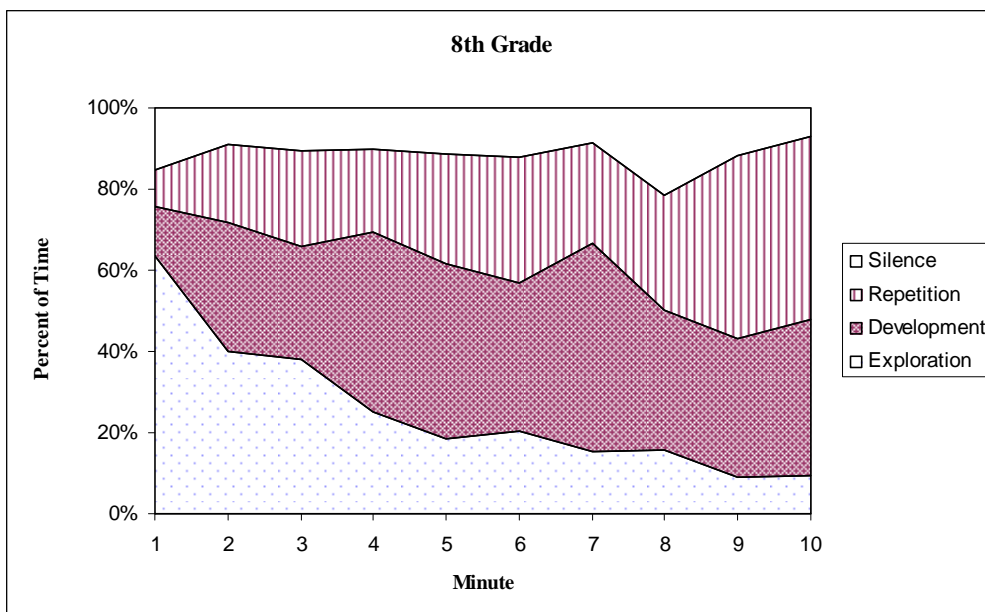
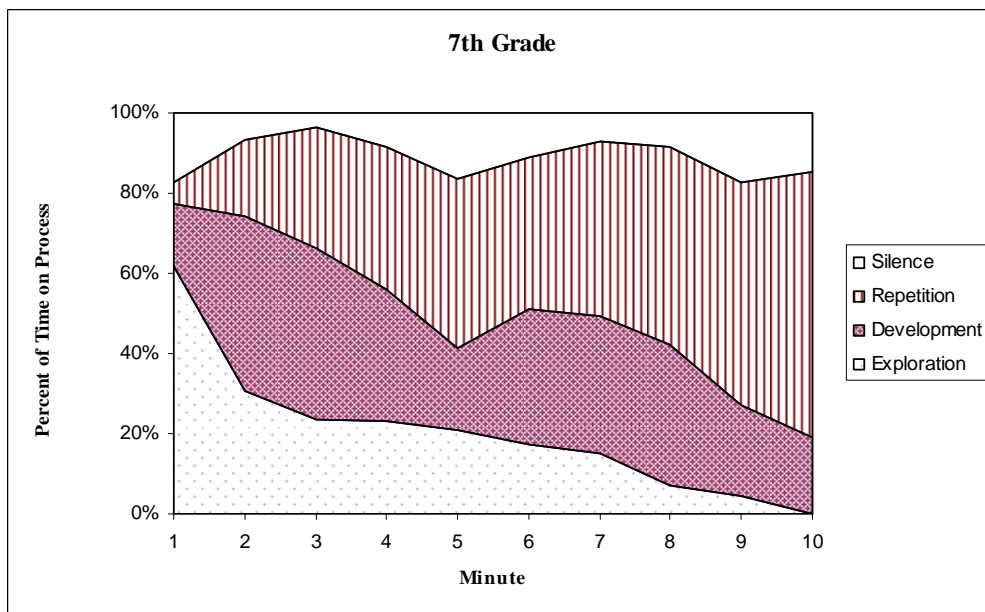
The percentage of time at each 1-minute episode that sixth, seventh, and eighth-grade students spent using each compositional process is indicated in Figure 1.

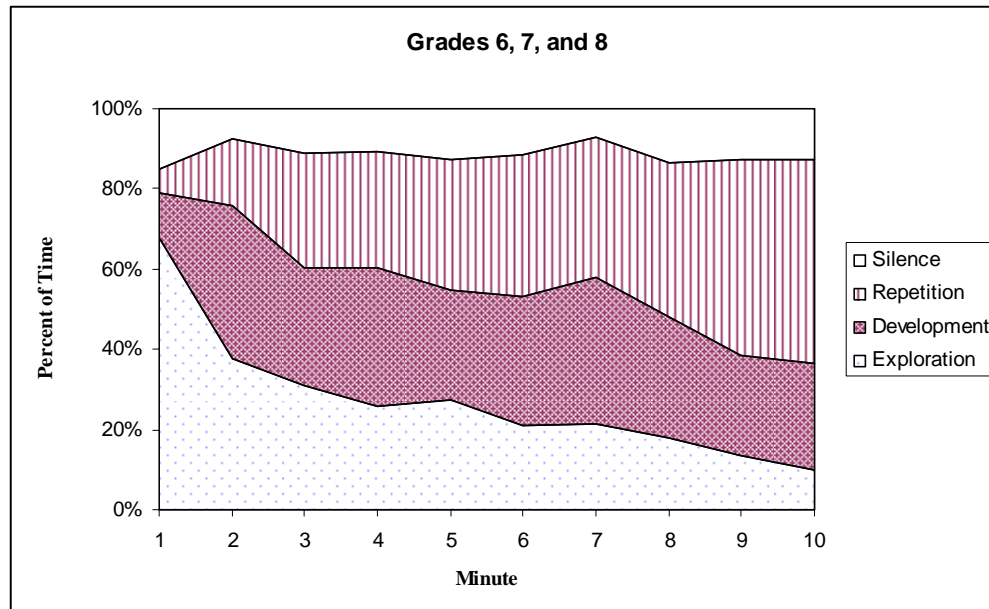
All three grade level began their composition time by spending 60% of the first minute on the processes of exploration. Sixth grade students emphasized exploration through minute 5 and then shifted to repetition for the remaining time. Seventh grade students shifted from exploration to development in minute 2 and then from development to repetition in minute 5. Eighth grade students shifted from exploration to development in minute 4 and then from development to repetition in minute nine. All three grade levels used exploration during each minute of composing time and all three grade levels spent the majority of the minute 9 on repetition. Eighth grade students experienced a spike in development during minute 7 followed by a spike in silence in minute 8. The final graph shows the average percentage of time spent on compositional processes by all three grade levels combined.

Figure 1

Percent of Time Spent on Compositional Processes over 10-minute Composition Time







Summary of Results

No statistically significant main effects were found in the interactions between gender, grade level, and the use of compositional processes over time. The only statistically significant main effect was found in the amount of time spent on specific processes. All participants were able to replicate their composition to some degree while 76% of the participants were able to replicate their compositions exactly.

Chapter 5: Discussion of Results and Conclusions

Introduction

The purpose of this study was to examine the effects of gender and grade level on the amount of time early adolescents spent on selected compositional processes (exploration, repetition, development, and silence). The results of this study indicate that no statistically significant main effects exist between gender, grade level, and the use of compositional processes over time. All students from grades 6, 7, and 8 were able to replicate their composition to some degree. The remainder of this chapter will examine these findings. I begin by comparing the results of this study with those of Kratus (1989). The chapter will then conclude with implications for music education and questions for future research.

Comparison to Kratus (1989)

Many results of this study correspond to the findings of the Kratus (1989) study. In the Kratus study, boys and girls were similar in their use of time on the different compositional processes. Similar findings were evident in this study. No significant gender differences existed for exploration, development, repetition, or silence.

Kratus (1989) discovered significant differences in the use of exploration, development, and repetition between different ages but no differences in the use of silence as 7-year-olds used exploration more than 9 and 11-year-olds, used less repetition than 11-year-olds, and used less development than 9 and 11-year-olds. This implies that younger children tend to explore more than older children, and older

children tend to use more repetition and development than younger children. The present study found no statistically significant main effects between grade level and time spent on compositional processes. One possible reason for this is small sample size. Sample size can influence results by increasing or decreasing the power of the statistical effect. Even though no main effects were found in this particular study, increasing the sample size increases the power of the statistical test and provides more data for analysis. A future study using the same methodology could be conducted to further examine any trends observed on a larger scale.

Interesting trends were observed in the results of this study when examining the mean time spent on each compositional process. In this study, eighth grade students spent more time on development than seventh and sixth grade students. Repetition did increase slightly between sixth grade and seventh grade but decreased from seventh grade to eighth grade. Table 3 shows a comparison between the data found in this study and the data found in the Kratus (1989) study. It is important to note (since one study included participants based on age and one based on grade level) that the typical age range for a sixth grader is 11-12, a seventh grader is 12-13 and an eighth grader is 13-14. The table shows that the decrease in repetition was replaced by an increase in the use of development. A closer look at this table also reveals that 11-year-olds, sixth graders, and seventh graders spent a similar amount of time on development with a slight decrease between the age of 12 and sixth grade.

Table 3
Comparison of Kratus (1989) and Present Study for Mean Time Spent on

<i>Compositional Processes</i>					
	Exploration	Development	Repetition	Silence	
<u>Age</u>					
<u>(Kratus)</u>					
7	65.63	15.13	10.83	8.42	
9	39.67	25.75	24.04	10.54	
11	29.63	33.13	30.92	6.33	
<u>Grade</u>					
<u>(present study)</u>					
6	34.90	22.30	46.10	17.90	
7	26.75	33.48	46.35	13.32	
8	27.40	41.80	33.60	4.39	

Note. Age results from Kratus (1989)

Development is a form of editing and manipulation of material which requires abstract thought (Santrock, 2001). A decrease in the use of development from age 11 to grade 6 followed by an increase from grade 6 to grades 7 and 8 could indicate a regression in creative ability in grade 6 as Swanwick and Tillman (1986) suggest, but the decrease in development between age 11 and 6th grade is not statistically significant. Kratus (1985) suggested that a plateau in cognitive thought exists at this age level rather than a pattern of regression. Kratus found that the quality of children's compositions actually decreased slightly from age 11 to age 13 in the categories of tempo strength, metric strength, tonal stability and finality.

The plateau in cognitive thought between age 11 and 7th grade rather than a regression is also supported by the Piagetian stages of cognitive development

(Santrock, 2001). The Piagetian stages of development suggest that children are leaving the concrete operational stage and entering the formal operations stage around age 11 (2001). Concrete operations are characterized by logical thinking and reasoning, classification skills, the ability to reverse operations, and the lack of abstract thought (2001). Formal operations are characterized by the presence of abstract thought, idealism, and high levels of logic (2001). When compared to the results of this study, it would seem consistent that concrete thinkers would use less development since development requires abstract thought. Formal operational thought begins around age 11 and continues to develop through age 20 (2001). This may be the reason why eighth grade students spent more time developing than sixth and seventh grade students. These students could be using more development due to the emergence of formal operational thought and the ability to think abstractly.

Further explanation of this developmental plateau is found in Piaget's idea that not all adolescents reach the various stages of development at the same time and may even experience different levels of thought across different subjects (Santrock, 2001). The plateau in the use of development between age 11 and seventh grade could indicate the period of transition as students proceed at different times from concrete thought to formal operational thought. The higher levels of development in eighth grade could also indicate an increased presence of formal operational thought. Findings from Kennedy's (1999) also support this trend with the finding that older composers spent more time revising ideas than younger composers.

Kratus (1989) found that 9 and 11-year-olds emphasized exploration at the beginning, then moved to development, and then repetition. Kratus suggested that the

shifting correlates with the creative process of exploration, incubation, and verification. Figure 1 shows that all four processes were found to occur during every minute of composition time, but one process seemed to be more prevalent than others at certain times. This links with the findings of Wiggins (2003) that children edit and revise their ideas from the very beginning stages of composition. In this study, seventh and eighth grade students followed this trend, but sixth grade students did not. Instead, sixth graders shifted from exploration to repetition with little emphasis on development. A few possibilities exist that could explain this difference. First, it is possible that the sixth grade students could have been audiating musical ideas rather than aloud on the keyboard. Second, these students may have chosen to sing or hum (which did take place) some developmental phrases which would have been counted as silence in the analysis. Third, and most likely, the progression from the concrete operational stage to formal operations played a role in the use of development. Even though sixth-grade students did not emphasize development during the ten minute composition period, they spent more time on development than 7-year-olds and used more repetition than 7-11 year-olds. This could indicate that sixth grade students are at the peak of concrete operations since they were more focused on performing a process and arriving at a final product than their younger counterparts.

Kratus (1989) found that students who were unable to replicate their compositions spent more time on the process of exploration than students who were able to replicate the findings. Those that did replicate their compositions spent more time on development and repetition. These results were confirmed in the present study as all students were able to replicate their composition to some degree with

most of the students replicating their composition exactly. Kratus found that younger students were less able to replicate their compositions than older students. This is consistent with the results of the present study in that sixth, seventh, and eighth graders more closely matched the time spent on compositional processes of 11-year-olds and not 7 or 9 year-olds. The ability to replicate requires advanced concrete operation thought which many 7 and 9 year-olds have yet to attain.

Finally, Kratus (1989) found that all students were able to complete the composition task and work throughout the duration of the composition time. Kratus writes that this implies that all students can engage in musical creativity to some degree. This study confirms this result and extends it further since not only were all students able to complete the task, they were able to complete it successfully. It also confirms the findings of Kennedy (2002) who found that children had little difficulty generating musical ideas. The findings in the present study are similar to the results and trends established and suggested by Kratus (1989) and others (Santrock, 2001; Kennedy, 2002; Wiggins, 2003). The next section will discuss the implications of this study on music education and give suggestions for future research.

Implications for Music Education

Although the results of this study showed that grade level, gender, and time spent on compositional processes are not significantly related, some trends were observed, especially in the use of development. This knowledge can assist music educators in developing composition teaching strategies that are appropriate for particular age levels. Kratus (1989) suggested that nine-year-olds need instruction that emphasizes improvisation since their composition time was spent mainly on

exploration. The present study indicated that eighth grade students may need to be reinforced in their use of development. Because eighth graders are starting to use their abstract thinking skills in composition, being taught how to examine their own musical ideas and refine them may make their compositions more stream-lined and polished. Students in seventh grade may also need to be reinforced in their use of development, but due to the varying levels of cognitive thought, teachers should reinforce students' abilities to create a cohesive finished product. Students in sixth grade may need to be reinforced in their ability to create a cohesive finished product and should be introduced to the idea of development even though not all students may be able to think abstractly. Finnegan (1989) recommends that all students be taught to develop his or her own compositional voice. In order to accomplish this, composition should involve group instruction as well as individual instruction for each student.

The results from the present study and Kratus (1989) indicate that children and early adolescents are able to engage in a creative musical activity and complete it successfully. This idea is echoed by Elliot (1995) who writes that all students are capable of being creative. Paynter (2001) and Wiggins (1989) add to this by recommending that creative activities be included in each music classroom because all students are capable of composition to some degree. Even though composition is one of the National Standards for music education and many researchers (Elliot 1995; Paynter, 2001; Wiggins, 1989) agree that students are capable of composing, composition is still not regularly included in K-12 classroom instruction (Kennedy, 2002). As music educators consider including composition in the music curriculum, they can take heart that research has shown that students are both able to compose

and that they benefit musically from doing it. Students who are involved in composition have been found to exhibit increased musical independence (Plummeridge, 1991), motivation (Bradley, 1974; Lowe, 2002; Plummeridge, 1991), confidence (Berkely, 2001), and musical comprehension (Goodkin, 2002; Hickey, 2001; Reid, 2002; Webster, 2000; Whitener, 1982; Wiggins, 1989). Music educators can be encouraged by these findings when developing a comprehensive music curriculum.

To assist music educators with including composition in the music classroom, composition pedagogy and teaching resources should be made more readily available to music education students as well as professionals. One of the main reasons for not including composition in the classroom is a lack of knowledge and resources (Kennedy, 2002). Many researchers and educators such as Morin (2002), Hickey, (1997) and Henry (1995) have created and researched composition teaching strategies to help music educators, but more work is needed. If educators are expected to teach composition, then they need to be given the proper instruction and materials to successfully and appropriately implement composition into the curriculum.

Questions for Future Research

Based on past research and the current study, there are still questions about composition which need to be addressed. This section submits the following questions for future research in music education:

1. This study did not produce any statistically significant findings though some interesting trends were observed. A replication of this study with a larger

sample would allow for these possible trends to be discovered so that they may be examined further.

2. This study only allowed each student 10 minutes to compose a short piece of music. More research should be conducted on the amount of time students spend composing. Both Levi (1991) and Wiggins (2003) suggest that students compose better when they are not given a time limit. This study could be replicated with an unlimited amount of composing time to see if the trends established in this study and by Kratus (1989) are supported in a more realistic setting.
3. Additional research needs to be done to investigate the plateau in creative development between ages 11 and 13. Does this plateau appear in other subject areas or just music? More research on why this plateau occurs can help teachers facilitate classroom instruction better suited to particular age levels.
4. Chapter 2 of this study examined the benefits of including composition in the classroom. Future research could examine whether to support or refute these benefits and help firmly establish a research-based body of evidence which shows that composition provides or does not provide benefits unattainable through other means.
5. This study examined the use of four compositional processes, but it is highly probable that students used other processes not analyzed in this study. Researchers should continue to examine in detail how students compose and how individualistic or uniform the composition process is.

6. Many arts-related classes emphasize not only performance but creativity. Art classes require study of traditional art and replication of the masters as well as original student work. Literature and language classes require study of classical literature as well as the creation of individual stories and essays. Since all art forms require creativity to some degree, is the creative process uniform across subject areas? When students create music, are they using the same strategies they would use to write an essay or paint a picture? Stronger research in this area could lead to a uniform method of teaching creativity across the curriculum and an opportunity to integrate curricula in many ways.

Appendix A

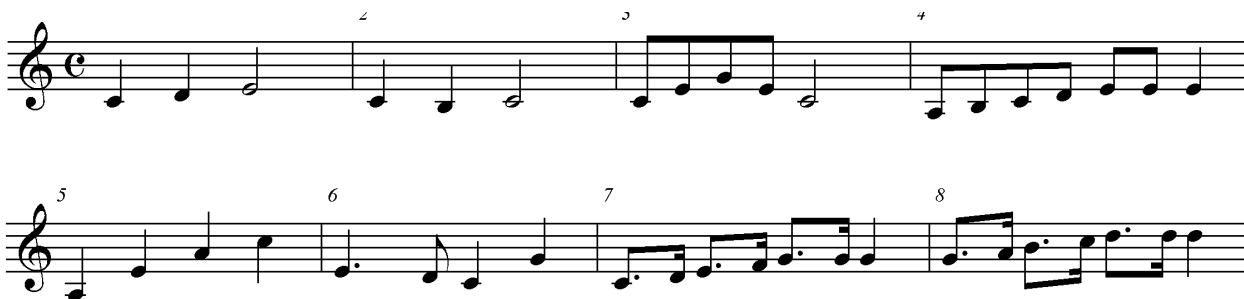
Procedures for Composition Project

1. Have student sit in front of the keyboard with the digital timer on the left side. The range of F4-A6 should be exposed with the rest of the keys covered with two pieces of poster board. Middle C should be marked with an X.
2. Sit next to the subject and read the following:

Researcher: *Today you will be participating in a short composition project. It is important that you know that this project will not affect your grade in band in any way. Thank you for agreeing to participate and all I ask is that you feel free to create your project in whatever way you like. Before we begin, let's take a look at the instrument you will be working with. This is an electronic keyboard which sounds just like a piano. We are going to become familiar with this instrument by playing a few short melodies. I will play something and then you will repeat what I played. Do you have any questions?*

(Answer any questions then go on to step 3)

3. Play the following short passages on measure at a time and have the student echo them.



After playing through each measure with the student read the following:

Researcher: *The passages we just played demonstrate the many sounds that this instrument can produce. Do you have any questions about the instrument or how it works?*

(Answer any questions then go on to step 4)

4. **Researcher:** *Your project today is to make up a song on this electronic keyboard. Your song will be a brand new song, one that no one has ever*

heard before. You may use any white keys you wish, but your song should begin on the key marked with an “X” [middle C]. You will have 10 minutes to make up your song, and I will ask you to play your song two times for the digital recorder. Be sure you can remember your song, so that you can play it the same way two times. Do you have any questions?

(Answer any questions then go on to step 5)

5. **Researcher:** *Great! This timer beside the keyboard will help you keep track of time. It will count forwards to 10 minutes. If you have any more questions, I will be back at my desk. You may begin!*
6. Start the timer as soon as the student plays the first note.
7. Move to the office area and out of the student’s view.
8. When 2 minutes are left, give the student a verbal reminder:

Researcher: *You now have two minutes left to complete your song.*
9. When 10 minutes have expired, say the following:

Researcher: *You may now stop working. I will ask you to play your song two times in a row. If you get stuck or can’t remember, that’s okay. Play what you remember and do the best that you can. Again, this is not for a grade and will not affect your standing in band class.*
10. Set the digital recorder to a new track. Have the student play the composition once.
11. Set the digital recorder to a new track. Have the student play the composition again.
12. When finished say:

Researcher: *Thank you very much for taking time to participate in this activity. You have been a big help to me, other teachers, and other band students. As a thank you, I would like you to have 10 talons (talons are rewards given to students at this particular school that they can use to purchase things or earn prizes with). Again, thank you for your help! You may return to class!*
13. Make sure and record the track numbers of the composition process and the two compositions in the data log along with the grade level and gender of the student.

Appendix B
Tabulation Sheet

Time Interval	Process Used				Time Interval	Process Used			
0-5"	E	D	R	S	2:55-3:00	E	D	R	S
5-10"	E	D	R	S	3:00-3:05	E	D	R	S
10-15"	E	D	R	S	3:05-3:10	E	D	R	S
15-20"	E	D	R	S	3:10-3:15	E	D	R	S
20-25"	E	D	R	S	3:15-3:20	E	D	R	S
25-30"	E	D	R	S	3:20-3:25	E	D	R	S
30-35"	E	D	R	S	3:25-3:30	E	D	R	S
35-40"	E	D	R	S	3:30-3:35	E	D	R	S
40-45"	E	D	R	S	3:35-3:40	E	D	R	S
45-50"	E	D	R	S	3:40-3:45	E	D	R	S
50-55"	E	D	R	S	3:45-3:50	E	D	R	S
55"-1:00'	E	D	R	S	3:50-3:55	E	D	R	S
1:00-1:05	E	D	R	S	3:55-4:00	E	D	R	S
1:05-1:10	E	D	R	S	4:00-4:05	E	D	R	S
1:10-1:15	E	D	R	S	4:05-4:10	E	D	R	S
1:15-1:20	E	D	R	S	4:10-4:15	E	D	R	S
1:20-1:25	E	D	R	S	4:15-4:20	E	D	R	S
1:25-1:30	E	D	R	S	4:20-4:25	E	D	R	S
1:30-1:35	E	D	R	S	4:25-4:30	E	D	R	S
1:35-1:40	E	D	R	S	4:30-4:35	E	D	R	S
1:40-1:45	E	D	R	S	4:35-4:40	E	D	R	S
1:45-1:50	E	D	R	S	4:40-4:45	E	D	R	S
1:50-1:55	E	D	R	S	4:45-4:50	E	D	R	S
1:55-2:00	E	D	R	S	4:50-4:55	E	D	R	S
2:00-2:05	E	D	R	S	4:55-5:00	E	D	R	S
2:05-2:10	E	D	R	S	5:00-5:05	E	D	R	S
2:10-2:15	E	D	R	S	5:05-5:10	E	D	R	S
2:15-2:20	E	D	R	S	5:10-5:15	E	D	R	S
2:20-2:25	E	D	R	S	5:15-5:20	E	D	R	S
2:25-2:30	E	D	R	S	5:20-5:25	E	D	R	S
2:30-2:35	E	D	R	S	5:25-5:30	E	D	R	S
2:35-2:40	E	D	R	S	5:30-5:35	E	D	R	S
2:40-2:45	E	D	R	S	5:35-5:40	E	D	R	S
2:45-2:50	E	D	R	S	5:40-5:45	E	D	R	S
2:50-2:55	E	D	R	S	5:45-5:50	E	D	R	S
Subtotal					Subtotal				

5:50-5:55	E	D	R	S	7:55-8:00	E	D	R	S	68
5:55-6:00	E	D	R	S	8:00-8:05	E	D	R	S	
6:00-6:05	E	D	R	S	8:05-8:10	E	D	R	S	
6:05-6:10	E	D	R	S	8:10-8:15	E	D	R	S	
6:10-6:15	E	D	R	S	8:15-8:20	E	D	R	S	
6:15-6:20	E	D	R	S	8:20-8:25	E	D	R	S	
6:20-6:25	E	D	R	S	8:25-8:30	E	D	R	S	
6:25-6:30	E	D	R	S	8:30-8:35	E	D	R	S	
6:30-6:35	E	D	R	S	8:35-8:40	E	D	R	S	
6:35-6:40	E	D	R	S	8:40-8:45	E	D	R	S	
6:40-6:45	E	D	R	S	8:45-8:50	E	D	R	S	
6:45-6:50	E	D	R	S	8:50-8:55	E	D	R	S	
6:50-6:55	E	D	R	S	8:55-9:00	E	D	R	S	
6:55-7:00	E	D	R	S	9:00-9:05	E	D	R	S	
7:00-7:05	E	D	R	S	9:05-9:10	E	D	R	S	
7:05-7:10	E	D	R	S	9:10-9:15	E	D	R	S	
7:10-7:15	E	D	R	S	9:15-9:20	E	D	R	S	
7:15-7:20	E	D	R	S	9:20-9:25	E	D	R	S	
7:20-7:25	E	D	R	S	9:25-9:30	E	D	R	S	
7:25-7:30	E	D	R	S	9:30-9:35	E	D	R	S	
7:30-7:35	E	D	R	S	9:35-9:40	E	D	R	S	
7:35-7:40	E	D	R	S	9:40-9:45	E	D	R	S	
7:40-7:45	E	D	R	S	9:45-9:50	E	D	R	S	
7:45-7:50	E	D	R	S	9:50-9:55	E	D	R	S	
7:50-7:55	E	D	R	S	9:55-10:00	E	D	R	S	
Subtotal**					Subtotal					
Total from other side**					Total from Other Side					
Final Total**					Final Total					

Grand Total: E_____D_____R_____S_____

Degree to which the subject's composition and its replication sounded alike. (Check one)

- _____ 3-Replication is the same as or almost the same as the original
 _____ 2-Some sections of the replication are the same as the original
 _____ 1-None or almost none of the replication is the same as the original

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