

AN ANALYSIS OF COMPOSITIONAL PROCESSES USED BY CHILDREN

A THESIS

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS

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BY

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April 11, 1995
Date

To the Associate Vice President for Research and Dean of the Graduate School:

I am submitting herewith a thesis written by Catherine L. Ashby entitled "An Analysis of Compositional Processes Used by Children." I have examined the final copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree Master of Music, with a major emphasis in Music Education and Educational Leadership.

John W. Fiske
Major Professor

We have read this thesis
and recommend its acceptance:

Janice N. Fillion
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Chair of Department of Performing Arts

Accepted

Leslie M. Thompson
Associate Vice President for Research and
Dean of the Graduate School

This is dedicated to my parents,
Mike and Beverley Luby,
who, by love and example,
have had a profound influence upon my life.

"Put it in a rhyme it will last a long time,
Put it in a song, it will last your whole life long."
Anonymous

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By Catherine L. Ashby

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ABSTRACT

The purpose of this study was to measure the process of creating music and to measure the final product. The responses of individual students were compared to the responses of students in peer groups. A secondary purpose was to measure responses of two age groups, 8 and 10 year old students. Twenty compositions were created. Each age group created ten compositions. Within each age group, five students composed an individual composition and five pairs of students each composed a composition. Subjects for this study (N= 30) were 8-year-old students (n=15) and 10-year-old students (n=15) from a suburban public school. The subjects were asked to compose a song in ten minutes, play the new song, and then repeat the song. The compositions were analyzed for time spent on the process of composition. Analysis consisted of time spent on exploration, development, repetition, and silence. Compositions were also measured for replication. Composition comparisons were made between age groups, single, and partner groups.

Results of this study indicate children 8 and 10 are capable of composing. All subjects demonstrating proficiency in replicating their songs differed in the use of repetition compared to subjects not measuring replication. Paired subjects differed

significantly in the use of silence. There was significant difference between the age groups in the use of development.

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CHAPTER 1

INTRODUCTION

There are many unanswered questions regarding the instructional process for creating musical compositions for students in the general music classroom. How do children create a composition? Can the creative process be taught? Can the creative process of composition be measured?

The newly adopted National Standards of Arts Education (Consortium of Arts Education Associations, 1994) supports the idea of creativity in the music classroom. However, supporting creativity through composition is an area yet to be thoroughly researched. Encouraging children to think imaginatively regarding sound, and then capturing this imagination in the form of something to be shared, can increase musical understanding, deepen sensitivity, and develop the composers of tomorrow (Webster, 1991). Analyzing the musical compositions, as developed by children of various ages, can be used to determine the relationship between the composition product and the process of composition. Thus, the creativity of children's music compositions can be measured both in individual and in a peer group setting.

Survey of Related Literature

The study of music creativity continues to be a major area of research. In 1941, Moorhead and Pond began asking questions: How do children create musically? What

musical products do children create? Webster (1977) continued this questioning, and, as a result, developed a measure of creativity which he labeled the Measure of Creative Thinking in Music. Webster says the creative process goes through four phases:

1. Musical Extensiveness--a measure of musical response time
2. Musical Flexibility--moving freely from one musical extreme to the other
(low/high, fast/slow, soft/loud)
3. Musical Originality--manipulates music uniquely
4. Musical Syntax--A shaping of the music, parts become whole

Webster defines creativity as "creative thinking." A composer will develop musically using the following four characteristics of creative thinking: (1) musical imagery--hearing the sound before it is produced, (2) rely on theoretical modeling of the creative process, (3) measurement of creative aptitude, and (4) musical observation. Too often the general music teacher will only allow convergent thinking. However, with divergent thinking there are several correct answers.

By 1979, creative research expanded to include improvisation. Improvisation is defined as a spontaneous invention and shaping of music (Flohr, 1979). It is a creative act involving thinking and performing music simultaneously. In Flohr's (1979) research, characteristics were studied of the music produced by preschool children, namely, motor energy, experimentation, and formal properties. Flohr discovered that children's creative abilities significantly changed with their chronological age. Under the age of four, children created unpredictable rhythms and melodies. With five years and older the improvisations became more predictable and produced a gradual development of musical characteristics. The research of creativity, beginning with improvisation, became

the first step toward defining the process and product of creativity.

The development of creativity in students is an important goal and the music curriculum offers a unique opportunity for the cultivation of creativity (Schmidt and Sinor, 1986). Research findings will aid teachers so that music creativity can be added to the Music Curriculum. Kratus (1990) lists the three components which should be used as bases in a system for developing goals and objectives for creative learning: the person creating, the process of creation, and the product created. Composition activities should follow exploration and improvisation. Composing allows time for reflection on musical ideas produced and to evaluate and modify the needs of the composition. Kratus (1990) also suggests the teacher leads the students through group composition activities, modeling the process of composition. No model for assessment has been developed for creative activities (Kratus, 1990). In assessing students's creative activities, the focus should highlight the behaviors achieved in the instructional objectives, not whether the composition was "good" or "bad," "creative or uncreative" (Kratus, 1990).

A method of examining the compositional process was developed by Kratus in 1989. By completing a time analysis of a composition, he could determine the time spent on exploration, development, repetition, and silence--the four categories of the compositional process. Like Flohr, Kratus' research suggested as the children become older the developmental processes of the musical compositions become more developed. The creative act of composition for the seven year old was similar to improvisation. The younger children used compositional time to explore new ideas. However, a study by

Wiggins (1994) indicated that with peer group composition random exploration was not a main activity. Students were more concerned with the holistic plan, then parts, and returning to the holistic plan. Experience may also be a factor with the phenomenon of random exploration (Wiggins, 1994).

Wiggins (1994) took Kratus' (1989) research a step further. In addition to an individual compositional process in a laboratory setting, Wiggins studied the compositional process with peer groups. Her research transported the experiment from the laboratory to the classroom. Students learned not only through teacher modeling but also through peer interaction. Analysis of peer interaction provided insight into the compositional process. To solve a compositional problem with a peer group, the students must express and clarify the ideas. The compositional activities may provide a rich source of data for analysis of the musical cognitive processes (DeLorenzo, 1989). These subjects' solutions to compositional problems may reflect thought processes (Wiggins, 1994).

CHAPTER II

STATEMENT OF THE PROBLEM

Creative activities are rare in general music classes (Webster, 1987). According to the National Standards of Arts Education (Consortium of National Music and Art Associations, 1994), a child's education and development should include music composition--the purposeful arrangement of sounds and silences. Teaching and assessing the process of composition is necessary and yet often ignored in the music classroom. Therefore, the relationship of the compositional process and the musical characteristics of the apprentice musician need to be analyzed to measure creativity.

Statement of Purpose

The purpose of this study is to measure the process of creating music and to measure the final product. The responses of individual students will be compared to the responses of students in peer interaction groups. A secondary purpose is to measure responses of two age groups, 8 and 10 year old students.

Definitions

The following terms are selected by Kratus' (1994). No conclusions relevant to other definitions of commonly used terms would be appropriate. Process definitions will include terms used with the analysis of the 10-minute composition session. Product definitions will include terminology used with the first composition and the replicated composition.

Process Definitions

Composition—A process composition is the act leading to the production of a unique, replicable sequence of pitches and durations.

Development— The music in a 5-second interval which sounds similar to, yet different from, music played in an earlier 5-second interval is called "development." Clear references to music played earlier can be heard in the melody, the rhythm, or both.

Exploration - The music in a 5-second interval and sounds unlike music played in earlier 5-second intervals is called "exploration."

Replication - The music in a 5-second interval which sounds the same as music played in an earlier 5-second interval is considered "replication."

Silence - No music heard in a 5-second interval is a period of "silence."

Product Definition

Composition - A product composition is a unique sequence of pitches and durations that its composer can replicate.

CHAPTER III

METHOD

Subjects

The subjects were children (N=30), ages 8 and 10, chosen randomly from the student population of an elementary school in the suburbs of Dallas and Ft. Worth. The 8-year-old subjects were third graders (n=15) and the 10-year-old subjects were fourth graders (n=15). The subjects were divided by age and then each age group was subdivided into five peer interaction and five single subject groups. Two students comprised each peer interaction group. All children in the school participated in two 60-minute and one 30-minute general music class every other week taught by a Music Specialist. The general curriculum was eclectic with an Orff emphasis. To control for prior experience on a keyboard instrument, only children with 0-12 months of piano lessons participated.

Materials

The equipment used in the composition task consisted of a Roland SC-7 MIDI interface, and a MacIntosh LC575 computer with *Music Time* software by Passport. To aid with the composing, each subject used a Yamaha PSR-310 multifunction MIDI keyboard consisting of 61 full size keys. The tone setting was set to "piano" and the rhythmic ostinato function was not used.

Procedure

Each subject(s) was tested in a small, quiet room in the school. The subjects sat at a table in front of the keyboard. To the left side of the subject(s) was a computer, cassette tape recorder, and a clock. The researcher sat next to the subjects during the instructions but moved to another part of the room once the subjects began to compose. The subjects were familiar with the keyboard since the keyboard was used in the general music classroom. Subjects then received the following instructions which defined the parameters of the task:

Your project, this morning, is to make up a brand new song--a song that no one has ever heard before. You will have 10-minutes to compose your brand new song. At the end of 10-minutes, I will ask you to play your composition two times. I will record your composition on the tape recorder and the computer. Be sure you can remember your song, so that you can play it the same way two times. After the new composition is recorded, I will print your composition for you to take home. Please use only the white keys and begin your composition on the "C" with the marker. Are you ready to compose your brand new song? Are there any questions? You may begin.

The timer was then set to begin the 10-minute session. Restrictions were placed on the use of "only the white keys" and "begin on C" to provide guidance and a framework in which the subject could work (Kratus, 1989). These restrictions are in accordance with Regleski's (1981) guidelines for creative activities in the general music class (p. 294).

During the 10-minute composition time, the subjects were informed of time expiration after 5 minutes, 8 minutes, and 10 minutes. After 10-minutes, I asked the subject(s) to play the composition. After the first playing, the subject(s) were asked to

play the same composition a second time. The compositions as well as the 10 minute composing session were retained on a cassette and a diskette.

Analysis of the Compositional Processes and Song Replication

The analysis of composition was a two-step process. The first step was to describe the compositional processes used by the subjects during the 10-minute sessions. The 10-minute sessions were divided into 120 intervals of 5 seconds each. The compositional process used in each interval was categorized in one of the following processes: Exploration, Development, Repetition, and Silence. The analysis required the judges to make an evaluation of the process used every 5 seconds as they listened to the diskettes of the subjects' 10-minute sessions. Judges recorded their evaluations on printed forms. Each form contained 120 boxes with the letters "E" (exploration), "D" (development), "R" (repetition), "S" (Silence) representing the four categories of compositional processes. During each 5-second interval, the judges would slash the letter of the process heard. If the judges heard more than one process during a single interval, they chose the process that made up most of the interval. The judges timed the intervals by listening to a tape indicating each 5-second interval with a tap of a rhythm stick. The number of intervals for exploration, development, repetition, and silence were totaled for each subject, and the means of the judges' ratings for these four processes were computed.

The second part of the analysis consisted of the two judges evaluating the degree in which the first composition and the second composition were replicated. The replication was based on a three point rating scale.

- 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.
- (Kratus, 1989)

The judges evaluated songs and replications from all of the subjects. The judges were Music Education Specialists. Each group was judged by two judges. The judges conducted an analysis of the compositional process and the composition replication. Using Statview, the interjudge reliability was $r = .987$.

CHAPTER IV

RESULTS

Table 1 shows the mean percentage of time used by subjects for exploration, development, repetition, and silence. To facilitate the interpretation of data, the number of 5-second intervals have been converted to the percentage of time used. The 8-year-old subjects (group and single) devoted composition time equally to exploration, development, and repetition. Relatively little time was spent on silence. For the 10-year-old subjects (group and single), repetition was the choice for most of the composition time.

Table 1

Mean % of Time Devoted to Exploration, Development, Repetition, and Silence by Age and Group

Source	Exploration	Development	Repetition	Silence
<i>Single</i>				
8 years	26.8	32.4	32.8	11.2
10 years	7.3	12.8	43.5	5.0
<i>Group</i>				
8 years	26.0	29.0	36.5	22.6
10 years	22.3	19.5	57.3	27.3
<i>Composite</i>				
8 years	26.4	30.7	34.7	16.9
10 years	14.8	16.2	50.4	16.2

Table 2

Summary of Two-Way Analyses of Variance, Age and Group

Source	Sum of Squares	df	MS	F	p
<i>Exploration</i>					
Age	672.80	1	672.80	3.89	NS
Group	252.05	1	252.05	1.46	NS
Age x Group	312.05	1	312.05	1.80	NS
Error	2768.90	16	173.06		
<i>Development</i>					
Age	1058.51	1	1058.51	6.45	.02
Group	13.61	1	13.61	.08	NS
Age x Group	127.51	1	127.51	.78	NS
Error	2626.50	16	164.16		
<i>Repetition</i>					
Age	1240.31	1	1240.31	3.41	NS
Group	382.81	1	382.81	1.05	NS
Age x Group	127.51	1	127.51	.35	NS
Error	5823.10	16	363.94		
<i>Silence</i>					
Age	2.81	1	2.81	.03	NS
Group	1419.61	1	1419.61	14.45	.002
Age x Group	148.51	1	148.51	1.51	NS
Error	1571.80	16	1571.80		

To determine whether there were age or group differences in the use of the compositional processes, a series of four two-way analyses of variance were performed, using the number of 5-second intervals for each compositional process (exploration, development, repetition, and silence) as dependent variables. Results indicated

significant group differences in the use of silence ($p < .01$), and significant age differences in the use of development ($p < .05$). No significant differences were found in the use of exploration or repetition (See Table 2).

To compare differences in the compositional processes used by subjects who replicated their songs with those subjects who did not, the data were divided into two groups by using the ratings given by the two judges. Both judges gave 4 subjects (single and group) replication ratings of 1-1.5. (none or almost none of the replication is the same as the original). Replication ratings of 3 (replication is the same or almost the same as the original) were given to 13 subjects (See Table 3).

Table 3

Number of Subjects with Replication Ratings of 1-1.5 and 3

Subjects	single 8	single 10	group 8	group 10	composite 8	composite 10	Total
<i>Ratings</i>							
1-1.5	2	1	1	0	3	1	4
3	2	4	2	5	4	9	13

Table 4 shows the mean percentage of time the groups devoted to exploration, development, repetition, and silence. The subjects with 1 ratings spent an equal amount of time on exploration, development, and repetition, and a small amount of time using silence. In contrast, the subjects with 3 ratings spent 48% of their time using repetition and equal amounts of exploration, development, and silence (See Table 4).

Table 4

Mean Percentages of Time Devoted to Exploration, Development, Repetition, and Silence by Replication Group

Replication Group	Exploration	Development	Repetition	Silence
1-1.5 ratings	26.5	33.3	30.4	8.0
3 ratings	16.9	16.5	48.0	16.9

The graphs allow one to analyze compositional processes over time. The composite graphic depiction of time used in Figures 1, 2, 3, and 4, illustrate marked differences in the compositional processes of subjects used in the replication groups. Subjects who received replication ratings of 1 (Figure 1) used an equal amount of exploration, development, and repetition during the 10-minute session. These subjects rarely used silence if at all. During the last 5-minutes of the session, 50-70% of the subjects were still using exploration or development. Given the lack of repetition, a replicable song could not be produced.

The composite time analysis for the subjects with replication ratings of 3 (Figure 2) illustrates a healthy increase in the use of repetition from 16% in the second minute to 100% in 7 and 8-minutes. Exploration, which occupied 85% of the first minute, quickly decreased to 10% in the fourth minute. Development was the predominant process in the second minute only. Repetition increased steadily from the second minute at 10% to 80% at minute four. Repetition maintained the majority process for the remainder of the 10-minute session.

The graphic illustrations show no significant differences between the single and group subjects with a replication rating of 3 except in the area of silence. Both groups spent a majority of time using the repetition process. The group subjects showed a significant increase with the use of silence. Identical to the Kratus (1989) study, the time analysis shows that subjects with replication ratings of 3 began to develop their musical ideas almost immediately with 50-70% of the second and third minute was spent on development. Repetition then was the choice with 50% in the repetition process during the second minute and 80-100% using repetition from minute four to minute ten. During the last few minutes subjects were rehearsing and making only minor changes in their songs, noted by the small amounts of exploration and development. Sufficient repetition evidently enabled these subjects to produce specific, replicable songs.

Figure 1. Graphic Analysis of Composition Period
Composite Subjects with Replication Rating of 1

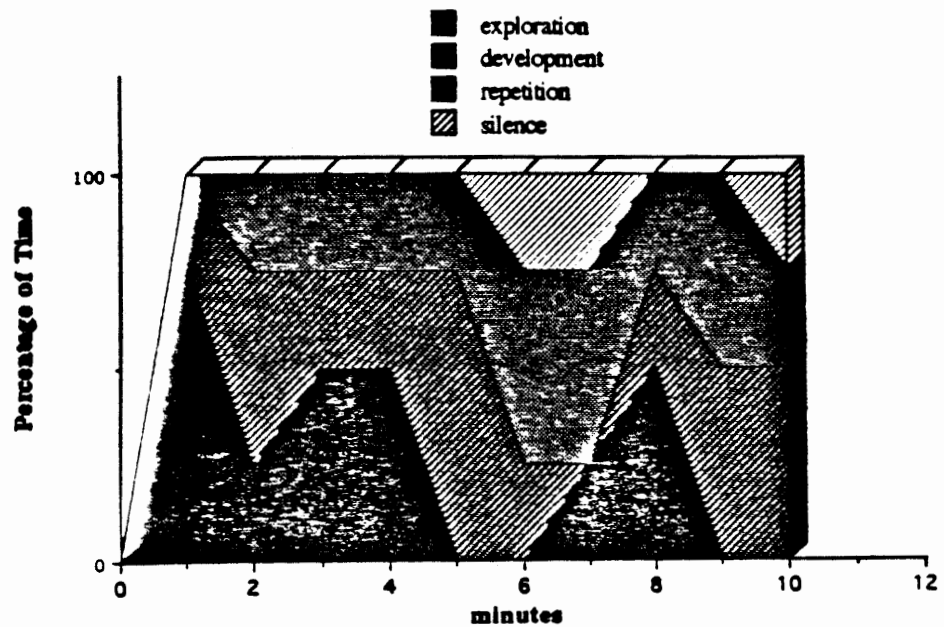


Figure 2. Graphic Analysis of Composition Period
Composite Subjects With Replication Ratings of 3

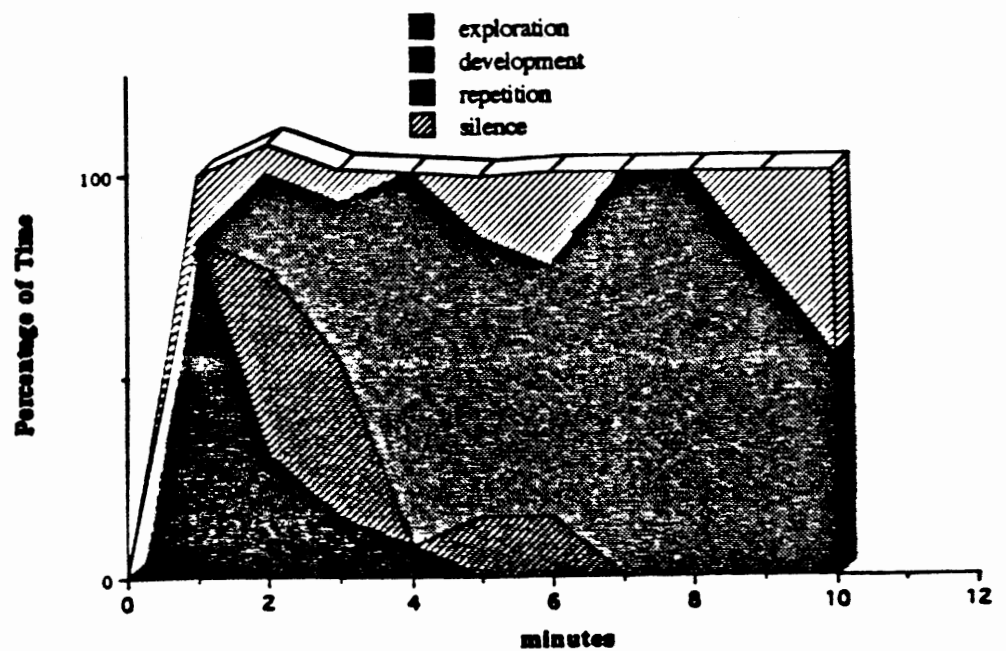


Figure 3. Graphic Analysis of Composition Period
Single Subjects With Replication Rating of 3

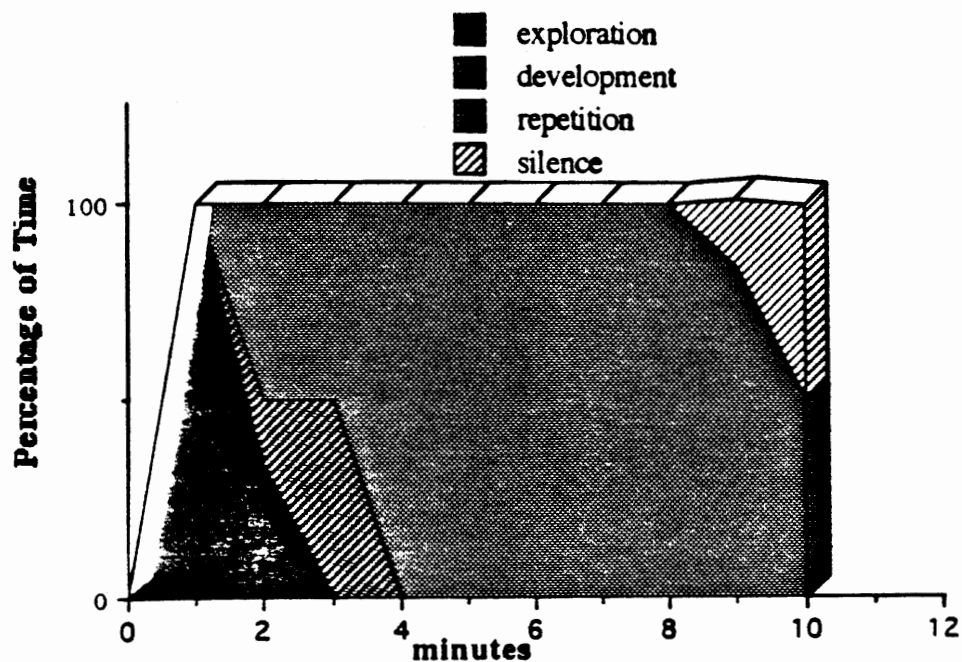
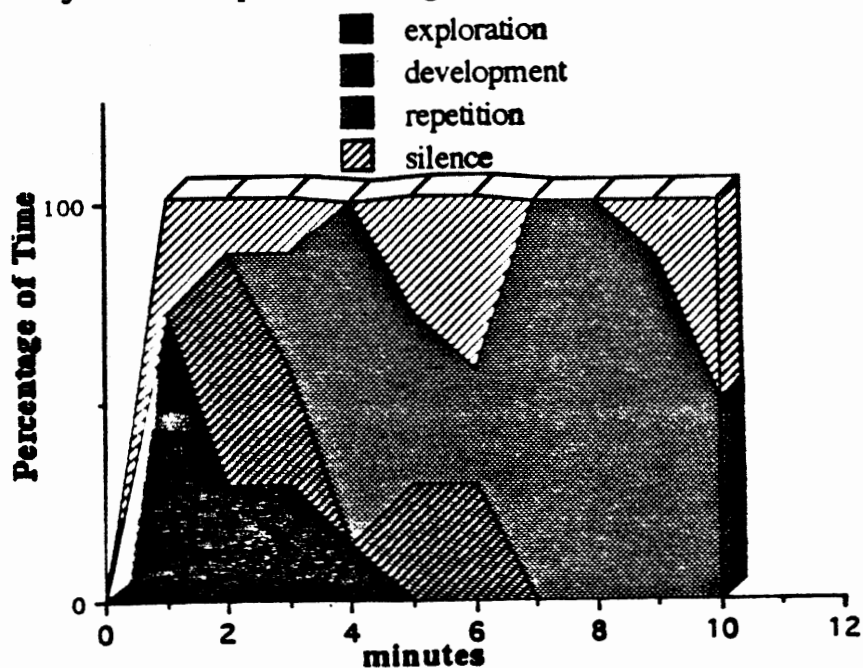


Figure 4. Graphic Analysis of Composition Period
Paired Subjects With Replication Rating of 3



CHAPTER V

DISCUSSION

The results of this study were consistent with earlier research (Kratus, 1989) that suggests children are capable of creating replicable compositions. Seven out of the ten groups of eight-year-old subjects were able to successfully create a replicable composition. In the present study, subjects classified by age and further subdivided by single or peer group, created compositions within a 10-minute composing session. The eight-year-old subjects composed primarily by using equal amounts of the compositional processes of exploration, development, and repetition. The 10-year-old subjects on the other hand used significantly more repetition and less exploration and development. The subjects' results in peer groups composed in a similar way to the single subjects in the area of exploration, development, and repetition, but used more silence in their composition process time. This was probably because of communication purposes.

The 8 and 10-year-old subjects tended to change from one process to another while composing. They spent the first minutes in exploration, moving to development, and then most of the time in repetition. The data from these subjects support the three stages in Webster's model of creative thinking (1987). Subject's emphasis on exploration at the beginning of the composition period is indicative of preparation; the emphasis next on development is indicative of incubation; and the emphasis on repetition

toward the end of the 10-minute session is indicative of verification. The evidence however, does not imply these are clearly defined stages (Kratus, 1989). Subjects did not suddenly shift from using exploration to development to repetition. These subjects realized composing is a process of relationships, identical to writing. The subjects used first one process and then another process dominating the creative activity. Music educators would do well to compare composing to writing a story for the elementary student. When beginning to write, the student will write ideas--exploration. Working and elaborating a few of the ideas compares with development. Then the student must make a final copy from the rough draft--repetition. Understanding and comparing this process will increase creative compositional activities.

The finding that subjects were able to replicate their compositions confirm earlier research. Using Kratus' (1989) terminology, these subjects composed a replicable song which required an understanding of the importance of repetition of musical ideas and a product orientation of the the act of composition. The subjects replicating the songs explored less and repeated more. It is evident these subjects understood how to solve the problem of composing by setting aside time for rehearsing the composition. This type of subject could be referred to as product oriented. They were able to practice the melodies and produce a compositional product. The subjects unable to replicate the compositions, explored and developed the melody but were unable to use the repetition process effectively. This type of subject could be referred to as process oriented.

Future research might address pairing product oriented and process oriented subjects. Replicating this study with younger children might be possible if the researcher integrated writing a composition with language arts. Such studies could benefit the general music classroom.

Finally, all 30 subjects were able to approach a creative musical problem in a meaningful way. All subjects were enthusiastic about the opportunity to create a brand new song. They were especially eager to use the keyboard that was connected to a computer. The results of this study support the findings of Kratus' (1989) study; elementary children can readily engage in composing musical ideas to create a musical composition. With the addition of technology, music educators need not wait until the students' understanding of music is highly developed before introducing creative composing activities. Giving children the opportunity to be creative and to compose music would greatly benefit the student. Benefits would include a more knowledgeable approach to composition and creating music. Using an understanding of the processes children use to compose may lead to activities supplementing the general music curriculum.

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APPENDICES

APPENDIX A

Parent Consent Form

**TEXAS WOMAN'S UNIVERSITY
SUBJECT CONSENT TO PARTICIPATE IN RESEARCH**

AN ANALYSIS OF CHILDREN'S MUSICAL COMPOSITIONS

Investigator: Katie Ashby, O.C. Taylor Elementary Music Teacher, (354-7222)

I am asking you to take part in a research study of children's creative composition process. I want to analyze the process of creativity in children's musical compositions.

If your child decides to take part, I will ask your child to spend about 20 minutes during a single visit in the music room at Taylor Elementary. During your child's visit, I will play a music creativity game with your child for 5 to 10 minutes. I will then ask your child to create a musical composition for the next 10 minutes. The entire 20 minutes will be audio taped and the musical composition will be saved on a computer disk.

There will be no charge to you for the research procedures. I will not pay you for participating in this study. Everything I learn about your child in this study will be confidential. I will store this data on computer disk without names at Taylor, and the data will be erased after the results have been tabulated. The results will be analyzed by three Music Specialists. The data will be stored until June 1995. If I publish the results of the study in a scientific magazine or book, I will not identify your child in any way. Your decision to take part in this study is voluntary. You are free to choose not to take part in the study or stop taking part at any time. If you experience any discomfort, you may choose to stop at any time. It will not affect you in any way. You are free to withdraw at any time without penalty.

The possible benefits may include some extra fun on the musical instruments or MIDI keyboard. Your child will be able to take home music written and composed all by himself!

We will try to prevent any problem that could happen because of this research. Please let us know at once if there is a problem and we will help you. You should understand that TWU does not provide medical services or financial assistance for injuries that might happen because you are taking part in this research.

If you have any questions about the research or about your rights as a subject, we want you to ask us. Our phone number is at the top of this form. If you have questions later, or if you wish to report a problem, please call us or the Office of Research & Grants Administration at 817-898-3375. If you have questions now, please feel free to ask me. I will give you a copy of this form to keep.

Your signature indicates that you have decided to take part in this research study and that you have read and understand the information given above and explained to you.

Signature of Student

Signature of Parent

Signature of Investigator

APPENDIX B

Student Survey Form

Children's Composition Questionnaire

Name _____ Homeroom _____

Birth Date _____

Please answer the following questions.

1. How long have you attended O.C. Taylor? _____
2. Do you or have you taken piano lessons? _____
3. How many months have you studied the piano? _____
4. Do you take lessons on any other instrument? _____
5. If the answer to #4 is "YES", what instrument and for how long? _____

6. Is there anything else you would like to tell me about your music background or musical experiences?

APPENDIX C

Analysis Sheet

Analysis Sheet

GROUP _____ TAPE _____ JUDGE _____

- E** Exploration- music sounds unlike music earlier
D Development- music sounds similar, yet different from music played earlier. Clear references can be heard in melody, rhythm, or both.
R Repetition- music sounds the same as music played earlier
S Silence- No music is heard because of subject silence, statements, or questions

If more than one process is heard during a single interval, chose the process that made up most of the interval.

5	EDRS	85	EDRS
10	EDRS	90	EDRS
15	EDRS	95	EDRS
20	EDRS	100	EDRS
25	EDRS	105	EDRS
30	EDRS	110	EDRS
35	EDRS	115	EDRS
40	EDRS	120	EDRS
45	EDRS	125	EDRS
50	EDRS	130	EDRS
55	EDRS	135	EDRS
60	EDRS	140	EDRS
65	EDRS	145	EDRS
70	EDRS	150	EDRS
75	EDRS	155	EDRS
80	EDRS	160	EDRS

APPENDIX D

Replication Sheet

Replication Rating Sheet

Group _____ Tape _____ Judge _____

Replicate Score _____

3 - Replication is the same 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

APPENDIX E

Children's Compositions With Replication Ratings of 3

8-Year-Old Single Subject Composition



10-Year-Old Single Subject Composition



8-Year-Old Paired Subject Composition



10-Year-Old Paired Subject Composition

The image displays a handwritten musical score for a 10-year-old paired subject composition. The score is organized into five systems, each consisting of a treble and bass staff joined by a brace. The notation is written in black ink on white paper. The first system shows a treble staff with a melodic line starting on a half note, followed by eighth and sixteenth notes, and a bass staff with a simple accompaniment. The second system continues the melody in the treble staff with a slur over a group of notes, while the bass staff provides a steady accompaniment. The third system features a more active treble staff with many beamed sixteenth notes, and the bass staff continues with a similar rhythmic pattern. The fourth system shows the treble staff with a few notes and rests, while the bass staff has a more complex accompaniment. The fifth and final system shows both staves with active, melodic lines, with the treble staff having a slur over the final notes. The notation includes various note values (half, quarter, eighth, sixteenth), rests, and slurs, indicating a piece of music with a clear rhythmic structure.

This page contains five systems of musical notation, each consisting of a treble and bass staff. The notation is for guitar, as evidenced by the use of natural harmonics (indicated by a small circle above the note) and the specific fingering and phrasing. The music is written in a key with one flat (B-flat) and a 4/4 time signature. The first system shows a melodic line in the treble staff and a supporting bass line. The second system features a more active treble staff with eighth and sixteenth notes, while the bass staff has rests. The third system continues the melodic development in the treble, with the bass staff providing a steady eighth-note accompaniment. The fourth system shows a shift in the bass line, with the treble staff having rests. The fifth system concludes the page with a final melodic phrase in the treble and a corresponding bass line.

This page contains five systems of musical notation, each consisting of a treble and bass staff. The notation is in a single system, likely 2/4 time, and features a variety of note values including eighth, sixteenth, and thirty-second notes, as well as rests. The first system shows a more active melody in the treble staff. The second system has a more active bass staff. The third system features a melody in the treble staff with a bass staff that has some activity in the first measure. The fourth system has a melody in the treble staff and a bass staff with some activity. The fifth system shows a melody in the treble staff and a bass staff with some activity. The notation is clean and professional, typical of a printed musical score.

The image displays four systems of musical notation, each consisting of a treble and bass staff. The notation is in black ink on a white background. The first system shows a treble staff with a melodic line and a bass staff with a supporting line. The second system features a treble staff with a long note and a bass staff with a complex chordal structure. The third system shows a treble staff with a melodic line and a bass staff with a complex chordal structure. The fourth system shows a treble staff with a melodic line and a bass staff with a complex chordal structure.

APPENDIX F

Letter of Approval

TEXAS WOMAN'S
UNIVERSITY

DENTON/DALLAS/HOUSTON

THE GRADUATE SCHOOL
P.O. Box 22479
Denton, TX 76204-0479
Phone: 817/898-3400
Fax: 817/898-3412

March 31, 1995

Ms. Catherine Ashby
1207 Ridgewood Cr.
Southlake, TX 76092

Dear Ms. Ashby:

Thank you for providing the materials necessary for the final approval of your prospectus in the Graduate Office. I am pleased to approve the prospectus, and I look forward to seeing the results of your study.

If I can be of further assistance, please let me know.

Sincerely yours,

Leslie M. Thompson

Leslie M. Thompson
Associate Vice President for
Research and Dean of the
Graduate School

dl

cc Dr. John Flohr
Dr. Richard Rodean