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The effective use of manipulatives and color coding in the achievement and application of music reading skills of third grade recorder students

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THE EFFECTIVE USE OF MANIPULATIVES AND COLOR CODING IN THE ACHIEVEMENT AND APPLICATION OF MUSIC READING SKILLS OF THIRD GRADE RECORDER STUDENTS

by
Kathy J. Gunsallus-Donachy

A Thesis

Submitted in partial fulfillment of the requirements of the
Master of Arts: Music Education Degree
of
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at
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Approved by

Date Approved 5/3/05

ABSTRACT

Kathy J. Gunsallus-Donachy
The Effective Use of Manipulatives and Color-Coding in the Achievement and Application of Music Reading Skills of Third Grade Recorder Students
2005
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The purpose of this study was to discover the positive effect on sight-reading ability of 100 third grade recorder students reading music notation when color-coding was applied to notes and manipulatives were used in note value instruction.

The problem was to compare effects on the learning and application of music reading skills between color-coded notes and monochromatics when students sight-read music playing their recorders.

The classes were randomly assigned to either the experimental or control group. The researcher, also the music teacher, taught each class once a week for 50 minutes. The treatment extended approximately 23 weeks. The experimental classes were instructed with color-coded materials and made manipulatives representing duration of note values. The control group was instructed with traditional monochromatics.

At the conclusion of the treatment, each student was tested on his sight-reading

skills by chanting rhythms and playing their recorder. Each student was tape-recorded for tonal and rhythm and evaluated by two independent judges. A Pearson correlation of <.05 was used to determine the inter-judge reliability.

The statistics to be evaluated were organized into a three one-dimensional designs for differences and was used to determine the effect on the control versus experimental group. A *t*-test was calculated for each design to determine the difference between the control and experimental treatments. No statistically significant differences were found for any of these designs.

Although previous research has shown a positive effect in the use of color-coding and manipulatives, the current study failed to prove these aids advantageous in the music reading skills or transfer of knowledge.

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CHAPTER ONE

Introduction

The use of manipulatives in math has existed throughout the centuries from the use of the abacus to various types of manipulatives presently aiding students in acquiring math skills. Currently, researchers at MIT find this concept so plausible that they are using the idea of manipulatives in interactive, digital computer programs to make technological manipulatives that appeal to older students.[1]

Marsh and Cooke used *Cuisenaire Rods*[2] as manipulatives to teach math concepts to third grade children with learning disabilities in math. Their results displayed success in the students' ability to use the correct operation such as addition or subtraction in word problems, and they were also able to transfer this knowledge to related math processes.[3] Furthermore, a study by Cass, Cates, Smith, and Jackson determined the use of manipulatives to be advantageous in teaching skills to students who were classified as learning disabled in math. The use of manipulatives enabled these students to implement their gained knowledge in solving problems, increased their long term retention of skills, and added to the success of transferring these skills to more traditional paper and pencil

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[1] Resnick, Mitchel, Michael Eisenberg, Robbie Berg, Bakhtiar Mikhak,and Diane Willow, "Learning With Digital Manipulatives New Frameworks to Help Elementary–School Students Explore "Advanced" Mathematical Concepts." *MIT Media Lab, http://lcs.www.media.mit.edu/groups/el/papers/mres/ digital-manip.*

[2] Cuisenaire Rods. Learning Resources, Inc., Vernon Hills, IL 1995.

[3] Marsh, L., and N. L. Cooke, "The Effects of Using Manipulatives in Teaching Math Problems to Students With Learning Disabilities." *Learning Disabilities Research and Practice*, 11 (1), 1996. 58-65.

math activities.[4]

Dwyer and Moore implemented a study in which their college anatomy classes were divided into two groups: one group was given color-coded brochures of the heart, while the other group received the same information in monochromatics. At the end of the treatment, test results revealed higher test scores for students who had received the color-coded materials than those who had received monochromatic instruction and materials.[5]

Regardless of the skill to be acquired, research has provided educators with a plethora of information revealing positive results for the learner when a variety of instructional materials are used. The various instructional modalities cause more neural activity, thus enabling the learners to gain a more in-depth understanding, resulting in increased retention of material to be used.

Miller's study describes the four learning modalities as they relate to music:

1) The aural modality where an activity with musical sounds is a primary requirement.
2) The kinesthetic modality where students participate in a movement activity to music so that the student's entire being is immersed in feeling the music.
3) The tactile modality where a concrete music experience employs touch as the sensory response to music.
4) The visual modality where sight is essential in the activity.

Generating these modalities invigorates interest on behalf of the students and various learning styles are stimulated to reinforce musical concepts.[6]

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[4] Cass, Cates, Smith, and Jackson, "Effects of Manipulatives Instruction on Solving Area and Perimeter Problems by Students With Learning Disabilities." *Learning Disabilities Research and Practice* 18 (2), 2003. 112-120.
[5] Dwyer, Francis, and David M. Moore, "Effect of Color Coding on Visually Oriented Tests With Students of Different Cognitive Styles." *Journal of Psychology*, 125, 1991. 677-680.
[6] Miller, Beth Ann, "Touch the Music! Learning Modalities in Elementary Music Class." *General Music Today*. 15, 2002. 4-13.

Music is an aural art and the development of visual music reading literacy skills has eluded some young children. Perhaps addressing the different learning modalities through formalized instruction would more efficiently address this problem.

In fact, Rogers addressed the effect of color-coding in a study of teaching music notation to first and second grade students. He divided the students into two groups. The control group received uncolored-monochromatic instruction, while the experimental group received instruction with colored materials. All students clapped and chanted quarter note and eighth note rhythm patterns. At the conclusion of his treatment, students were tested in sight-reading rhythms using the notes learned in class. Students who received the color-coded instruction scored slightly higher than those who had received monochromatic instruction. Rogers also monitored the achievement of classified students, whose test scores were significantly higher than those of the regular education students, as a result of the color-coded instruction.[7]

Rogers, in another study, addressed the use of color-coding and its effect on tasks of performing music from memory, sight-reading, and naming letter names of notes. This study demonstrated that color-coding was advantageous to cognitively challenged students who performed with a higher degree of success with color-coding, and all students applauded the use of color-coded notes that facilitated their note reading requirements.[8]

Purpose

For this study, the researcher investigated and assessed the effectiveness of color-

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[7] Rogers, G. L., "Effect of Colored Rhythmic Notation on Music-Reading Skills of Elementary Students." *Journal of Research in Music Education,* 44, 1996. 15-25.

[8] Rogers, G. L., "Effect of Color-Coded Notation on Music Achievement of Elementary Instrumental Students." *Journal of Research in Music Education,* 39 (1), 1991. 64-73.

coding and manipulatives in the application and comprehension of third grade recorder students' achievement in both tonal and rhythm music notation.

Problem

The problem is to determine the comparative effects of color-coding and the use of manipulatives on the achievement of third grade recorder students' reading of music notation in both tonal and rhythm concepts.

CHAPTER TWO

Related Research

Introduction

There is a proliferation of research that ascertains the positive effect of learning and retention of subject matter when taught with color-enhanced materials. A multitude of color-coded teaching aids for academics have resulted from this research, but have not been utilized in the area of music education. However, the present research draws on two studies by Rogers involving the use of color-coding in his instruction of music notation and sight-reading rhythms.

The Rogers' Study[1]

The purpose of Rogers' study was to determine the effect on first and second grade students' ability to sight-read rhythm patterns by clapping and vocalizing colored and uncolored rhythm patterns. There were 134 students in six classes of first and second grade students from lower middle, to low economic backgrounds that attended two different schools. Thirty-four students were considered special needs children who received assistance in reading and other academic subjects. These students had not received prior music notation instruction.

Prior to the outset of the study, the rhythm subtest of the Primary Measures of Music Audiation (PMMA) [2] was administered.

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[1] Rogers, George, L. "Effect of Colored Rhythmic Notation on Music–Reading Skills of Elementary Students." *Journal of Research in Music Education.* 44 (1), 1996. 15-25.
[2] Gordon, Edwin, E. Primary Measures of Audiation. 1986. Chicago: G.I.A.

The treatment extended for twenty-three weeks. The pretest scores enabled the investigator to match the classes according to their rhythmic aptitude and randomly assign them to either the control or experimental group.

The regular, general music teacher taught all the students during the treatment period. The students were instructed in traditional music theory notation. This included note heads, stems, half notes, quarter notes, quarter rests, and eighth notes; measures were drawn with the time signature 4/4, bar lines, and double bar lines at the end of the rhythm patterns. Rhythms for chanting and clapping were drawn with colored chalk utilizing the color-coding technique for the experimental group. Contrasting colors were chosen randomly, preventing students from associating a specific color to a particular note. Meanwhile, the control group received instruction with notation written in white chalk. Double-sided chalkboards were used for changing rhythms from colored notation to monochromatics when classes changed to expedite classroom preparation. Rhythm exercises were practiced at the beginning of each class so that interruptions or other music activities would not supercede the treatment requirements. The Kodaly system of using *ta* for quarter notes and *ti-ti* for eighth notes was implemented for reading rhythms.

A designated second grade class was given a pilot test to evaluate the appropriateness of the skill level of the rhythm patterns to be included in the testing criteria. The test material was similar to that taught in class. The music teacher administered the tests to maintain the familiar classroom management and environment.

The test rhythms were administered randomly using either color-coding or monochromatics. Each student's performance was tape-recorded and rhythm accuracy was evaluated on a scale from 0-12. The accuracy of the vocalizations of the rhythms was not included in the evaluations. Students were asked about their preference of colored versus uncolored notation. To determine the reliability of the dependent measures, a second judge evaluated 25% of the students' recorded performances. The reliability coefficient was calculated to be .91 for colored notation given to the experimental group, and .89 for the control group instructed in monochromatics.

The results were favorable for all students' sight-reading rhythm patterns in both the experimental and control groups. Students in the experimental group tested with color-coding received a mean score of 11.13. Although both groups read monochromatic rhythm charts, the control group scored 10.28, whereas the experimental group scored 10.77. This result demonstrated a slight, statistically insignificant difference. In a repeated measures-analysis of variance, findings revealed slightly higher scores ($p>.05$), where the means for all students were 10.51 for monochromatics and 10.78 for colored notation. The results of the 31 resource room students showed a slight increase in the mean score of the color-coded rhythm over monochromatics.

Overall, the test results affirmed that color-coded instruction had a positive effect on the sight-reading ability of first and second grade students. Eighty percent of all the students preferred the colored notation. However, the music teacher informed the researcher that some students preferred the monochromatic notation because it appeared more difficult.

The success of the use of color-coding may result from increased attention and involvement due to the learners' attraction to color. Another reason for success may be that color aids in the differentiation between the notes on the lines and spaces. The researcher suggested that random colors be used to avoid specific association between colors and notes.

Music instructors might consider adding color to notation instruction because with a minimum of effort, supplies, and expense, music reading can be made more enjoyable but still increase music reading skills for all students.

The present research draws on Rogers' studies applying his color-coding concept to third grade recorder instruction. Upon the implementation of these methods, acquired music reading skills would be transferred to sight-reading abilities. The current researcher has found music reading concepts, retention, application, and transfer of skills to playing the recorder elusive to the elementary music students. The desire is to implement Rogers' color-coding concept to discover its effect on the achievement of all students in learning to read music notation and enabling them to apply and retain music-reading skills playing the recorder.

George L. Rogers' Study[3]

In this investigation, Rogers sought to determine the effect of color-coded music notation instructional materials on fifth and sixth grade beginning instrumental students. Tasks to be accomplished included performing from memory, sight-reading, and naming letter names of notes. Identifying note names and reading notes are basic goals; color-coding music instructional materials would be an appropriate learning aid to facilitate mastery of these skills.

The subjects of this study were ninety-two fifth and sixth grade beginning instrumental students from two different schools. Forty-two of the students from School

[3] Rogers, George, L. "Effect of Color-Coded Notation on Music Achievement of Elementary Instrumental Students." *Journal of Research In Music Education.* 39 (1), 1991. 64-73.

1 were from a middle-class socio-economic background. The remaining fifty students from School 2 were from middle-lower to lower socio-economic backgrounds. There were six students in School 2 that were classified as learning disabled or academically challenged. Students in both schools were assigned to two groups using a random numbers table.

Beginning instrumental students were chosen for three reasons:

1) children have displayed a cross sensory skill which might emerge from this study,
2) the treatment involved two types of notation,
3) instrumental students were used instead of vocal students so that one's reading ability would not interfere with the objectives of memorizing and sight-reading.

During the 12-week treatment, the experimental group of 46 students received color-coded method books and instructional materials with each note highlighted with different, contrasting colored felt tip markers. Students were informed of the experiment. The control group was comprised of 46 students who were instructed with the same materials, but they were uncolored. The regular instrumental teachers, one per school, taught all the students once a week for 45-minute classes.

At the end of the 12-week treatment period, students' performances were tape recorded for evaluation. The testing procedures included three sections:

1) performing a 26-note melody from memory, which had been presented either in color or monochromatics,
2) students sight-read two twelve-note melodies; one was colored and the other monochromatic,
3) students named notes in two 7-tone melodies, one in color and one monochromatic; each student received a numeric score for the number of correct pitches named or played.

A second judge evaluated 50% of the test scores of sight-reading and note naming to determine the reliability of those dependent measures. Pearson's reliability coefficients were calculated as follows: memorization .98, color-coded sight-reading .88, and uncolored sight-reading .90. The students were asked for their preference of colored or uncolored notation; their responses were objective, however, this information was not included in the formal evaluations.

Results were varied and not substantially affirmative in determining use of color-coding as a successful instructional tool. Students' combined scores were similar for the memorization segment of the test. The experimental group had a combined score of 15.24 in contrast to 15.48 for the control group.

The school was used as a blocking variable. Test results between the two schools showed a significant differentiation in the scores. In School 1, the experimental group's score was 10.50, and the control group scored 12.82. In School 2, the experimental group scored 17.92, and the control group's score was 18.88.

In the sight-reading task, students in both groups obtained higher combined scores when tested with color-coded notation. However, the experimental group scored lower than the control group when reading uncolored notation. The experimental group scored higher than the control group when colored notation was used. In the note-reading test, the combined mean scores were higher with color-coding (6.59) in comparison to uncolored notation (5.76).

The learning disabled and educably mentally handicapped students were totally dependent on the color-coded notation and were unable to identify uncolored notes. However, they scored a solid 10.5 when sight-reading colored notation. In addressing the objective question of students' preferences, 18 out of 46 chose color-coded notation. All but three from the experimental group preferred the colored notation.

Rogers concluded from the testing results that color-coding did not have a significant effect on students' achievement of performance from memory, sight-reading, and naming notes. He also observed that some students who were instructed using color-coding were unable to transfer their knowledge to monochromatic notation.

Rogers adds, however, that because of the students' enthusiastic preference of colored notation, the benefit of using color for students with special needs, and the use of color as a basic tool for music therapists, color-coding is a tool that might be advantageous to music educators and students.

The current researcher, also the regular music teacher, has recognized the confusion that occurs with some young children as they attempt to learn music notation and apply it to playing recorders. Rogers' studies and conclusions are applicable to the current study since he used color-coding for both subject groups who were at the beginner level of playing an instrument and reading music. The researcher also notes that although there is an abundance of information in using manipulatives as a learning tool for teaching math concepts, no comparable information is available regarding the use of manipulatives in music instruction. This study is a fusion of Rogers' investigations of the use of color-coding in music instructional materials, and the current investigation of the success in utilizing manipulatives in music instruction in the achievement and application of music notation skills. These concepts will be applied to third grade recorder instruction.

Although the subjects in the current study have received prior instruction in music reading, it is their first opportunity in learning to play the recorder and read music simultaneously.

CHAPTER THREE

Design and Analysis

Sample

The simple random sample consisted of 100 students in five third grades. All third grade students attended the neighborhood elementary school. The students represented both multi-cultural and economic diversity.

Procedures

Before the research began, a letter of consent was sent to the superintendent of the school district and the principal of the school where the study was implemented. Upon receiving approval for the study by the administration, a letter of intent and permission slip was sent home to the parents informing them of the study. The music teacher requested that the permission slips be returned; upon their return, they were filed, and the testing procedure began. Letters can be referred to in Appendix A.

The five third grade classes were assigned randomly to two groups who received 50 minutes of music instruction during the regular music class each week. They were taught basic music theory that included letter names of notes of the treble staff, and note values. All students were given recorders and music. Three classes, with a total of 58 students, constituted the experimental group; the remaining two classes, with a total of 42 students, constituted the control group. Prior to the experimental portion of this study, all third grade students were given both the tonal and rhythm subtests of the Primary Measures of Music Audiation (PMMA)[1]

The experimental classes received instruction using colored chalk to highlight the letter names of the staff on the chalkboard, and *Mega Bloks*[2] were used as manipulatives to show the duration and relationship of whole notes, half notes, and quarter notes. *Cuisenaire Rods*[3] were used for eighth notes. Furthermore, the experimental group made manipulatves from different colored strips of construction paper with matching circles, replicating the sizes and shapes of the *Mega Bloks*[4] and *Cuisenaire Rods.*[5]

During the twelve-week treatment, the teacher used different colored chalk to show the notation on the chalkboard. The colors used were blue for "B," purple for "A", green for "G", orange for "F#", brown for "D" on the fourth line, and turquoise for "D" below the treble staff.

At the end of the experimental period, all students in both the experimental and control groups were tested by sight-reading eight measures of the folk song, "John Brown Had a Little Indian."[6] This song was chosen because it included all the note values and letter names learned during the treatment period. See Appendix C.

The testing procedure took place in the music room where two chairs and a music stand were set up with the appropriate material in place. The students were informed that both the playing and rhythm chanting portions of the test would be tape-recorded.

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[1] Gordon, Edwin E., Manual of Primary Measures of Music Audiation and the Intermediate Measures of Music Audiation. Chicago: G. I. A. Publications, Inc., 1986.
[2] Mega Bloks 2003. Mega Bloks Inc. Champlain, NY 12919 USA.
[3] Cuisenaire Rods, 1995. Cuisenaire Company of America, Inc., 10 Bank Street, Box 5026, White Plains, NY 10602-5026.
[4] op. cit. Mega Bloks
[5] op. cit. Cuisenaire Rods.
[6] Kulbach, Johanna E., Tunes for Children. Carl Van Roy Company: 1959.

The students were invited to look at the fingering charts for review and to look over the music. The song was performed twice. Using the first eight measures of the criterion song, the investigator set the steady beat; the students then chanted the rhythm and played the song on their recorder.

The students in the experimental classes read the song from an oak tag chart with the staff, G clef sign, and time signature 4/4 written in monochromatics. The notes on different lines and spaces making up the melody were color-coded. To avoid having the students recognize the song upon reading the title and playing by-ear, the title and lyrics were removed with "white-out." Note names were not given; however, monochromatic charts with the notes and note names on the staff with fingerings were made available to the students in the control group. The same procedures were followed using color-coding with the experimental group.

Two independent judges evaluated the tape-recorded performances of each student. The tonal and rhythm portions of the *Instrumental Performance Rating Scale* used in the *Clark Saunders Measurement Workshop*[7] were used for this evaluation process. The criteria for these rating scales are located in Appendix D.

Analysis

To determine the success of the inter-judge agreement between the judges, an interjudge reliability on each portion of the rating scale set was calculated using a Pearson correlation.

Data gleaned from the scores of the criterion test song were organized into three one-dimensional designs for differences, which included one each for tonal achievement,

[7] Saunders, T. Clark, "Effective Measurement of Music Performance Skills, an Application of Research in Daily Instruction Workshop," Glassboro, New Jersey, October 1990.

rhythm achievement, and the composite achievement scores. The combined ratings for each tonal and rhythm accuracy constituted the data for analysis. The level of confidence was set at .05.

CHAPTER FOUR

Results and Interpretations

Interjudge Reliabilities. The interjudge reliabilities for the tonal, rhythm, and composite performances were: .647, .694, and .688, respectively.

Tonal Achievement Scores. Means, standard deviations, and the *t*-test summary data are presented in Table 1. The researcher failed to find a statistically significant mean difference between the experimental group who used color coding and manipulatives and the control group in their tonal sight-reading achievement while playing the recorder.

Table 1

Means, Standard Deviation, and *t*-test summary data for Tonal Achievement

Group	N	Mean	S.D.
Experimental	58	3.155	1.765
Control	42	2.929	1.659

$t_{(98)} = .650^{\text{n.s.}}$

Rhythm Achievement Scores. Means, Standard Deviation, and *t*-test summary data are presented in Table 2. Again, the researcher failed to find a statistically significant mean difference between the experimental group who used color-coding and manipulatives and the control group in their rhythm sight-reading achievement while playing the recorder.

Table 2

Means, Standard Deviation, and t-test summary data for Rhythm Achievement

Group	N	Mean	S.D.
Experimental	58	3.948	.290
Control	42	4.548	.372

$t_{(98)} = -1.288$ n.s.

Composite Achievement Scores. Means, Standard Deviation, and t-test summary data are presented in Table 3. Again, the researcher failed to find a statistically significant mean difference between the experimental group who used color-coding and manipulatives and the control group in their composite achievement scores while playing the recorder.

Table 3

Means, Standard Deviation, and t-test summary data for Composite Achievement

Group	N	Mean	S.D.
Experimental	58	7.103	3.437
Control	42	7.452	3.086

$t_{(98)} = -.523$ n.s.

Interpretations

The problem of the study was to determine if color-coding and the use of manipulatives would increase students' sight-reading ability while playing the recorder and reading rhythmic notation. The results of the study determined no statistically significant advantages in using color-coding and manipulatives to increase music-reading ability. Although the interjudge reliability was high, a

Type II error still could have occurred in all aspects of the study. Conditions that affected the results might include:

1) the small number of children involved in the study and the length of treatment,
2) the researcher-teacher was unable to monitor practice time,
3) the students enjoyed making the manipulatives, however, that also took away from actual playing time,
4) students were not always prepared with their recorder and music,
5) and non-instructional interruptions occurred.

Apparently the use of manipulatives and color-coding did not provide expected transfer of knowledge from using manipulatives to recognition of written music notation. Rogers also examined this learning aid in his study of elementary instrumental students. Although the results of his study demonstrated a slight but insignificant increase in scores between color-coded musical instruction and monochromatics, the present researcher concurs that continued usage can boost students' awareness and enjoyment.

CHAPTER FIVE

Summary and Conclusions

Purpose and Problem

The purpose of this study was to investigate the success of color-coding and the use of manipulatives in the achievement and application of music notation reading of third grade recorder students.

The problems included the following:

1) to determine whether the use of color-coding musical notation had a successful affect on the achievement of music note reading skills and the application of those skills on performing a song of the third grade recorder students.
2) to determine the positive effect of the use of manipulatives in learning note values.

Procedures

The sample for this study included 100 third grade students who attended an elementary school in Southern New Jersey. Three classes were randomly assigned to the experimental group and two classes in the control group. The investigator taught each class once a week for 50 minutes.

At the outset of the treatment the students were administered the Rhythm and Tonal Subtests of the PMMA[1] to identify music aptitude level. During the treatment period, all students were taught the same note names, fingerings and note values. The experimental classes received instruction with color-coded music notation. Note values

[1] Gordon, Edwin, E., Manual of Primary Measures of Music Audiation and the Intermediate Measures of Music Audiation. Chicago: G. I. A. Publications, Inc., 1986.

were taught using both purchased and handmade manipulatives. The control classes received traditional instruction using monochromatic printed music and did not use manipulatives.

At the end of the treatment, each student was tested sight-reading, playing the criterion song on the recorder and chanting the melodic rhythm using the "du-day" that all students practiced in music class. The student performances were tape-recorded. At the conclusion of the testing, two independent judges evaluated the performances. The Saunders' *Instrumental Performance Rating Scale*[2] was utilized for scoring the accuracy of rhythm and tone.

Design and Analysis

Data gleaned from the test scores were organized into three one-dimensional designs for differences, which included one each for tonal, rhythm, and the composite achievement scores. The combined ratings for each constituted the data for analysis. The level of confidence was set at .05.

Results

The interjudge reliabilities ranged between .647-.693. For all designs, the researcher failed to find statistically significant mean differences.

Conclusions

Based on the data obtained from the study, it could not yet be concluded that the use of color-coded notation and manipulatives has a positive impact on the students' sight-reading music while playing the recorder. Although results of this study did not display increased sight-reading ability of third grade recorder students by using

[2]Saunders, T. Clark, "Effective Measurement of Music Performance Skills, an Application of Research in Daily Instruction Workshop," Glassboro, New Jersey, October 1990.

color-coding and manipulatives, an abundance of research indicated that these learning tools could ignite multi-sensory responses to learning in multiple facets of students' education.

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APPENDICES

APPENDIX A

Letter of Consent to Superintendent and Principal

Letter to Parents and Student Permission Form

Kathy Gunsallus~Donachy
519 Greenwood Avenue,
Riverside, New Jersey

Mrs. Mary Fitzgerald, Principal
Hillside Elementary School
1370 Hainesport Road,
Mount Laurel, New Jersey 08054

Dear Mrs. Fitzgerald,

Presently, I am enrolled in the Graduate Program at Rowan University in Glassboro, New Jersey working towards a Master's Degree in Music Education. A requirement for achieving this goal is to write a thesis on a particular aspect of music education.

The focus of my thesis research will be the Third Grade Recorder Classes where various playing and music writing notation techniques would be implemented. It is my desire to examine the effectiveness of using manipulatives to increase the achievement of music reading skills of Third Grade Recorder Students.

The information attained will be used exclusively for the study and student identity will remain confidential. Furthermore, photography or videography will not be utilized.

It is my desire that through research more effective methods of instruction will be discovered to better accommodate all students' learning and achievement.

At this time, I am requesting your consent to initiate this research study.

In advance, I thank you for your cooperation and continued support for this rewarding process.

Yours Truly,

Mrs. Kathy Gunsallus~Donachy
Music Teacher
Hillside School

Hillside Elementary School
1370 Hainesport Road,
Mount Laurel, New Jersey 08054
September 28, 2004

Dear Parents,

Presently, I am enrolled in the Graduate Program at Rowan University in Glassboro, New Jersey working towards a Master's Degree in Music Education. A requirement to achieve this goal is to write a thesis on a particular aspect of music education.

I am requesting your consent for your child to participate in a research study focusing on music reading skills.

The information attained will be used exclusively for the study and students' identities remain confidential. Furthermore, photography or videography will not be utilized.

I would ask that you sign and return the permission form below to me by Tuesday, October 5, 2004.

In advance, I thank you for sharing in this exciting and rewarding process.

Sincerely,
Mrs. Kathy G. Donachy
Kathy G. Donachy
Music Teacher

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Please return this form to Mrs. Kathy G. Donachy by Tuesday, October 5, 2004.

I grant permission for________________________to be a participant in the music
Child's Name
research study.

Parent/Guardian Signature_______________________________________
~~~~~~

APPENDIX B

Lesson Plans

LESSON PLANS

Lesson Plan I.
Objective: Experimental classes will use the longest bar with four pegs from the *Mega Bloks* to represent a whole note with four beats.
2) All students will receive basic music theory facts: whole note, the staff, and note names of the lines and spaces.
3) Learn recorder fingering for "B."
4) Review "piggy word bank" vocabulary list.

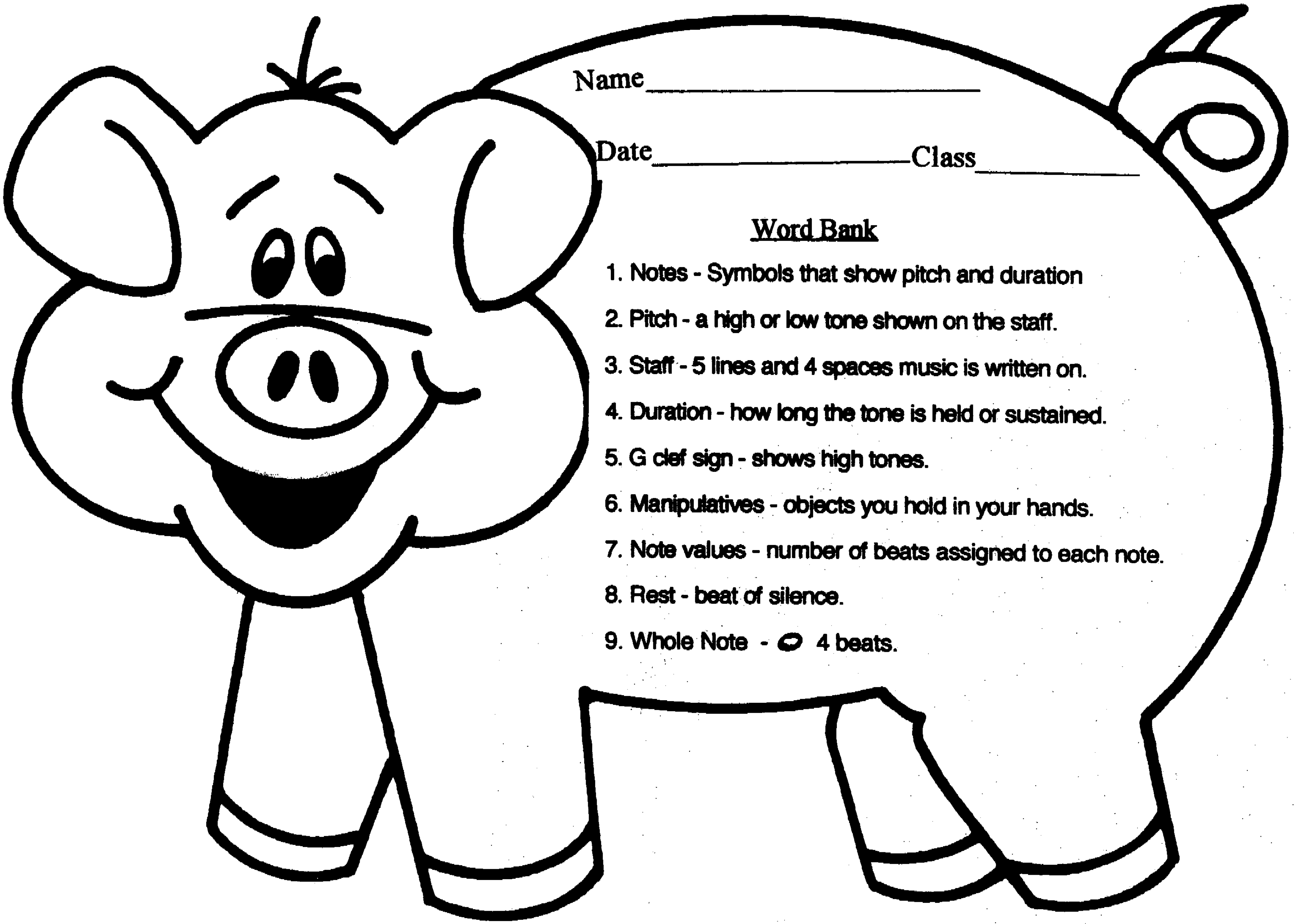
Procedure:
Distribute and review "piggy word bank."
Make handmade manipulatives using contrasting colored construction paper to replicate the *Mega Bloks*.
Cut the paper to match the size of the *Mega Bloks* 5 ½ x 1 ½ inches.
Trace around a quarter to make circles representing single beats.
Glue these onto the 5 ½ x 1½-inch strips.
Draw a whole note on one side of the longest bar.
Tap each peg and hold a pitch for four beats.
Draw the staff using colored chalk to match the pitches to be learned.
Third line "B" is blue.
Teach fingering, thumb and first finger for "B."
Take turns having some children tap the manipulative while others play.
Have the students keep their manipulatives in a plastic sandwich bag in their music folder.

Lesson Plan II.
Objective: All students will learn half notes using the two-peg bar to show the relationship that one half note equals two beats.

Procedure: For all consecutive lessons, the review always includes the manipulatives to show the note values, and color-coding to discern between lines and spaces.
Review: fingering for "B" and whole notes.
Learn fingering for "A" thumb and two fingers.
Play whole notes and half notes using the colors, blue for B and purple for A.
Students are given two strips of construction paper half the size of the whole note strip.
Draw a half note on each strip and write 2 beats.
Show the blocks with the two pegs and draw half notes on each.

Lesson III.
Objective: Students will learn, tap, sing, and play quarter notes.
Review.

Procedure: Cut four equal rectangular shaped pieces of construction paper that equals the 5 ½ x 1 ½ strip. This demonstrates the four single beats-quarter notes-in a whole note.



Name______________________

Date________________Class__________

Word Bank

1. Notes - Symbols that show pitch and duration
2. Pitch - a high or low tone shown on the staff.
3. Staff - 5 lines and 4 spaces music is written on.
4. Duration - how long the tone is held or sustained.
5. G clef sign - shows high tones.
6. Manipulatives - objects you hold in your hands.
7. Note values - number of beats assigned to each note.
8. Rest - beat of silence.
9. Whole Note - 4 beats.

Students are given single rectangular shaped pieces of construction paper to show quarter notes. Draw quarter notes on each piece then glue it on the 5 ½ inch strip.
The teacher draws quarter notes on third line "B" on the staff.
Students tap the four pieces, chant on a neutral syllable, and play quarter notes on "B" on the recorder.
Ed Sueta Recorder Method, p. 3 is used to review all note values.

Lesson IV.
Objective: Students will play all previously learned notes and chant the rhythm on a neutral syllable "du."

Procedure: Second line G is introduced and color-coded in green.
Learn second line G and fingering-thumb and three fingers.
The quarter rest is introduced as 1 beat of silence.
Students practice showing silent beats with their hands open.
Ed Sueta Recorder Method, p. 3.
Students will play color-coded whole notes, half notes, and quarter notes on B, A, and G written on the music staff with appropriate colored chalk.
Play "Mary Had a Little Lamb" written with quarter notes and quarter rests.

Lesson V.
Objective: Students will review all learned notes using manipulatives.

Procedure:
Play "French Folk Song using the color-coded song chart drawn on 24x36 inch oak tag.
The previously learned notes BAG and all note values are found in this song.
Using handmade manipulatives and *Mega Bloks*, have students create, and sing their own rhythms.
To audiate duration, sing each note value on neutral syllable "du."
Sing BAG on each note value.
Play favorite songs.

Lesson VI.
Objective: Review all note values, using *Mega Bloks* and student made manipulatives.
Use color-coded chart to review "French Folk Song."
Add a new song to reinforce all note values and letter names.

Procedure:
Continue following previous plan.

Lesson VII.
Objective: Introduce eighth notes. Use *Cuisenaire Rods* to show eighth notes.

Procedure: Show students the *Cuisenaire Rods* and the gradations of longest to shortest lengths.
Use the rods to demonstrate the note values: the longest rod for whole note,

the half-sized rod for half notes, quarter-sized rods for quarter notes, and the eighth-sized rods for eighth notes.
Tap quarter notes, then eighth notes.
Show two eighth notes equal one quarter note, then chant the eighth notes using "du-day."
Students have construction paper pieces to show eighth notes.
Tap quarter notes, then keeping a steady beat, tap eighth notes playing rhythm sticks.
Add songs to show quarter note and eighth note rhythms.

Lesson VIII.
Objective: Learn fourth line D, color-coded brown, on the recorder.

Procedure:
Play and sing color-coded scale tones learned thus far: D, C, B, A and G.
Use manipulatives to make rhythms.
Practice all note values on all letter names to hear duration while one student plays a drum to keep the steady beat.
Using the Ed Sueta Recorder Method, P. 11, show the fingering for D-thumb and second finger.
Practice #1. Reviewing all the note values with manipulatives.
Play # 2. "C and D."
Play #3. "Rain, Rain, Go Away."
Learn P. 15. "Mary Had a Little Lamb."
Chant rhythm on a neutral syllable,"du."
Do fingerings while saying letter names.

Lesson IX.
Objective: All students will learn F#. Follow previous format.

Lesson X.
Objective: All students will learn the dotted half note following given format.

Lesson XI.
Objective: All students will learn D below Middle C, thumb and six fingers.

Lesson XII.
Objective: Review all previously learned notes, both letter names and values.

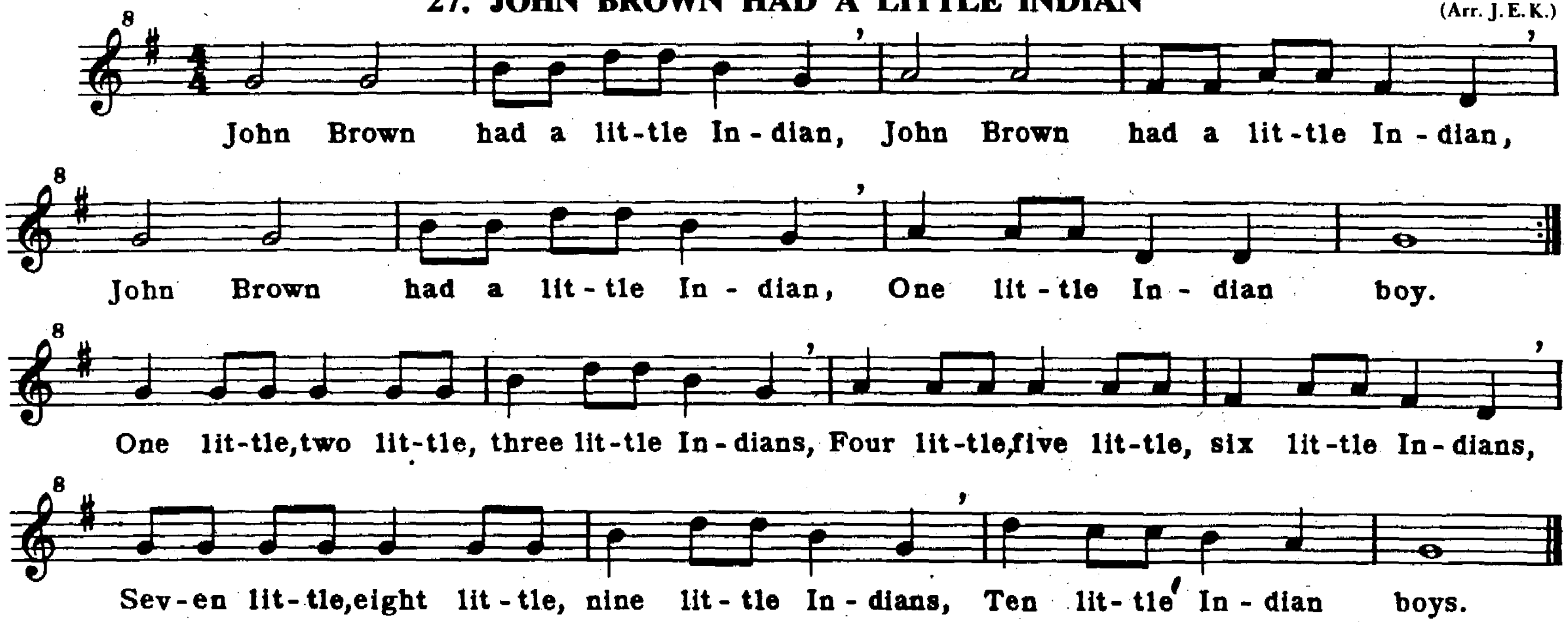
Procedure:
Use manipulatives to create and chant rhythm patterns.
Play songs that include all of the learned notes.
Prepare for recorded test.

APPENDIX C

Criterion Song

27. JOHN BROWN HAD A LITTLE INDIAN

(Arr. J. E. K.)



Criterion Test Song

John Brown Had a Little Indian

(Arr. J. E. K.)

APPENDIX D

Tonal Rating

Rhythm Rating

Instrumental Performance Rating Scale

Tonal Rating

The student instrumental performance of the prepared selection included:

5) an accuracy of intonation throughout.
4) nearly accurate intonation with a minimal amount of imprecise intervals.
3) accurate intonation at the points of cadence(phrase endings) otherwise, there was a lack of precise intonation.
2) individual pitches included tonal center and the performance included an overall sense of tonality, however, with imprecise intervals and adjacent pitches.
1) individual pitches which lacked tonal center and an overall sense of tonality.

Rhythm Rating

The student instrumental performance of a prepared selection:

5) was performed accurately with precise melodic rhythm.
4) was performed nearly accurate minimal amount of imprecise melodic rhythm.
3) included a consistent tempo and recognizable meter throughout the performance, however, it included short continuous sections of imprecise melodic rhythms.
2) included portions of consistent and inconsistent tempo and recognizable and unrecognizable meter with precise melodic rhythms.
1) included a lack of consistent tempo and recognizable meter.

RATING SCORES

NUMBER	RHYTHM	TONAL	COMPOSITE
1			
2			
3			
4			
5			
6			
7			
8			
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10			
11			
12			
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14			
15			
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22			